THE

McGILL

University Calendar,

AND

EXAMINATION PAPERS.

1881-82.

CORRECTED TO JUNE, 1881.



Montreal:
PRINTED BY JOHN LOVELL AND SON, ST. NICHOLAS STREET.
MDCCCLXXXI.

PRESENTED TO THE LIBRARY

BY

Dr. J. Clark Murray.

Class [redacted] Book [redacted]

1881-82



No. 34377.

Library of McGill College.

MONTREAL.

Received 1894.

ANNUAL CALENDAR

OF

McGILL COLLEGE

AND

UNIVERSITY,

MONTREAL.

FOUNDED UNDER BEQUEST OF THE HON. JAMES McGILL,
ERECTED INTO A UNIVERSITY BY ROYAL CHARTER
IN 1821; AND RE-ORGANIZED BY AN
AMENDED CHARTER IN 1852.

SESSION OF 1881-82.

Montreal:
PRINTED FOR THE UNIVERSITY BY JOHN LOVELL & SON.

1881.

3437

LE3
M2
1881-82
34377

The *Examination Papers* of the Session 1880-81 are published separately, and may be purchased of the Secretary, or through booksellers.

3437

McGill University Libraries
3 100 785 287 7

Governing Body of the University.

VISITOR:

HIS EXCELLENCY THE RIGHT HON. THE MARQUIS OF LORNE, K.T., P.C.,
GOVERNOR GENERAL OF CANADA, &C.

GOVERNORS:—

[*Being the Members of the Royal Institution for the advancement of Learning.*]

THE HON. CHARLES DEWEY DAY, LL.D., D.C.L., *President and Chancellor of the University.*

THE HON. JAMES FERRIER, SENATOR, M.L.C.
PETER REDPATH, ESQ.
GEORGE MOFFATT, M.A.
JOHN H. R. MOLSON, ESQ.
THE HON. FREDERICK W. TORRANCE, M.A., B.C.L.
CHARLES J. BRYDGES, ESQ.
THE HON. SIR ALEXANDER T. GALT, K.C.M.G.
THE HON. SIR FRANCIS HINCKS, K.C.M.G., C.B.
JOHN MOLSON, ESQ.
JOSEPH HICKSON, ESQ.
THE HON. ROBERT MACKAY.
THE HON. JOHN J. C. ABBOTT, D.C.L., Q.C.
ROBERT A. RAMSAY, M.A., B.C.L.

[The Board of Governors has, under the Royal Charter, the power to frame Statutes, to make Appointments, and to administer the Finances of the University.]

PRINCIPAL:—

JOHN W. DAWSON, M.A., LL.D., F.R.S., C.M.G., *Vice-Chancellor.*

[The Principal has, under the Statutes, the general superintendence of all affairs of the College and University, under such regulations as may be in force.]

FELLOWS:—

VEN. ARCHDEACON LEACH, M.A., D.C.L., LL.D. Vice-Principal and Dean of the Faculty of Arts.
HENRY ASPINWALL HOWE, LL.D., Governors' Fellow.

34377.

GEORGE W. CAMPBELL, M.A., M.D, LL.D., Dean of the Faculty of Medicine.

REV. JOHN COOK, D.D., Principal of Morrin College, Quebec.

ALEXANDER JOHNSON, M.A., LL.D., Vice-Dean of the Faculty of Arts, Governors' Fellow.

REV. GEORGE CORNISH, M.A., LL.D., Elective Fellow, Faculty of Arts.

REV. HENRY WILKES, M.A., D.D., LL.D., Principal of the Congregational College of British North America.

REV. D. H. MACVICAR, LL.D., Principal of the Presbyterian College of Montreal.

WILLIAM H. HICKS, ESQ., Principal of McGill Normal School.

J. J. MCLAREN, M.A., B.C.L., Representative Fellow in Law.

JOHN R. DOUGALL, M.A., Representative Fellow in Arts.

WILLIAM H. KERR, Q.C., D.C.L., Dean of the Faculty of Law.

REV. J. CLARKE MURRAY, LL.D., Elective Fellow, Faculty of Arts..

HENRY T. BOVEY, M.A., C.E., Dean of the Faculty of Applied Science.

BERNARD J. HARRINGTON, B.A., Ph.D., Elective Fellow, Fac. App. Science.

REV. E. J. REXFORD, B.A., Representative Fellow in Arts.

ROBERT BELL, Grad. Civ. Eng., M.D., Representative Fellow in App. Science.

REV. JOHN JENKINS, D.D., LL.D., Governors' Fellow.

REV. J. F. STEVENSON, B.A., D.D., Chairman Protestant Board of School Commissioners.

REV. CANON HENDERSON, M.A., Principal of the Montreal Diocesan Theological College.

REV. GEORGE DOUGLAS LL.D., Principal of Wesleyan Theological College.

WILLIAM OSLER, M.D., Representative Fellow in Medicine.

CLEMENT H. MCLEOD, Ma. E., Representative Fellow in Applied Science.

ROBERT M. SMITH, B. Sc., Principal of St. Francis College, Richmond.

J. S. ARCHIBALD, M.A., B.C.L., Elective Fellow, Faculty of Law.

GEORGE ROSS, M.A., M.D., Elective Fellow, Faculty of Medicine.

FRANCIS J. SHEPHERD, M.D., Representative Fellow in Medicine.

JOHN S. HALL, B.A., B.C.L., Representative Fellow in Law.

[The Governors, Principal and Fellows constitute, under the Charter, the Corporation of the University, which has the power, under the Statutes, to frame regulations touching Courses of Study, Matriculation, Graduation and other Educational matters ; and to grant Degrees.]

SECRETARY, REGISTRAR AND BURSAR :—

[*And Secretary of the Royal Institution.*]

WILLIAM CRAIG BAYNES, B.A., Residence and Office, East Wing, McGill College. Office hours 10 to 2.

JAMES W. BRAKENRIDGE, B.C.L., Clerk ; Residence, 39 Lorne Avenue.

OFFICERS OF INSTRUCTION:

JOHN WILLIAM DAWSON, M.A., LL.D., F.R.S., C.M.G. *Principal, Logan Professor of Geology and Professor of Natural History.*	East Wing McGill College.
VEN. ARCHDEACON LEACH, M.A., D.C.L., LL.D. *Vice-Principal, Dean of the Faculty of Arts and Molson Professor of English Literature.*	16 University Street.
HENRY ASPINWALL HOWE, LL.D. *Emeritus Professor of Mathematics and Natural Philosophy.*	Outremont.
GEORGE W. CAMPBELL, M.A., M.D., LL.D. *Dean of the Faculty of Medicine and Emeritus Professor in the Faculty of Medicine.*	707 Sherbrooke Street.
WILLAM E. SCOTT, M.D. *Professor of Anatomy.*	109 Union Avenue.
WILLIAM WRIGHT, M.D. *Professor of Materia Medica and Pharmacy.*	84 St. Famille Street.
ROBERT P. HOWARD, M.D. *Professor of the Theory and Practice of Medicine.*	47 Union Avenue
REV. A. DE SOLA, LL.D. *Professor of Hebrew and Oriental Literature.*	73 McGill Col. Av
HON. WILLIAM BADGLEY, D.C.L. *Emeritus Professor in the Faculty of Law.*	64 McGill Col. Av.
HON. R. G. LAFLAMME, D.C.L. *Emeritus Professor in the Faculty of Law.*	23 Berri Street.
CHARLES F. A. MARKGRAF, M.A. *Professor of German Language and Literature.*	McGill Col. Library.
D. C. MCCALLUM, M.D. *Professor of Midwifery and Diseases of Women and Children.*	45 Union Avenue.
ALEXANDER JOHNSON, M.A., LL.D. [Trin. Col. Dublin]. *Professor of Mathematics and Redpath Professor of Natural Philosophy, Vice-Dean of the Faculty of Arts.*	70 McGill Col. Av.
REV. GEORGE CORNISH, M.A., LL D. *Professor of Classical Literature.*	177 Drummond Street.
PIERRE J. DAREY, M.A., B.C.L. *Professor of French Language and Literature.*	39 McGill College Av.
ROBERT CRAIK, M.D. *Emeritus Professor in the Faculty of Medicine.*	2 Phillips Square
EDWARD CARTER, Q.C., D.C.L. *Emeritus Professor in the Faculty of Law.*	31 Cadieux Street.
G. E. FENWICK, M.D. *Professor of Surgery.*	1404 St. Catherine Street.
JOSEPH M. DRAKE, M.D. *Emeritus Professor in the Faculty of Medicine.*	45 Beaver Hall Terrace
N. W. TRENHOLME, M A., B.C.L. *Professor of Roman Law.*	Olivier Street, Cote St Antoine

J. S. C. WURTELE, B.C.L.
Professor of Commercial Law — 416 St. Antoine Street.

WILLIAM H. KERR, D.C.L.
Dean of the Faculty of Law, Professor of International Law — 387 Sherbrooke.

GILBERT P. GIRDWOOD, M.D.
Professor of Chemistry. — 28 Beaver Hall Terrace.

REV. J. CLARKE MURRAY, LL.D. [Glasgow].
Professor of Logic and John Frothingham Professor of Mental and Moral Philosophy. — 111 Mackay Street.

HON. H. F. RAINVILLE, LL.B. [Laval].
Professor of Real Estate Law. — 192 St. Hubert.

GEORGE ROSS, M.A., M.D.
Professor of Clinical Medicine. — 49 Union Avenue.

BERNARD J. HARRINGTON, B.A., Ph.D.
Professor of Assaying and Mining, and Lecturer on Chemistry. — Wallbrae Pl., Univ. St.

THOMAS G. RODDICK, M.D.
Professor of Clinical Surgery. — 44 Beaver Hall Terrace.

WILLIAM OSLER, M.D.
Professor of Institutes of Medicine. — 1351 St. Catherine Street.

WILLIAM GARDNER, M.D.
Professor of Medical Jurisprudence. — 551 St. Joseph Street.

HENRY T. BOVEY, M.A., A.M.I.C.E., M.I.M.E., Fellow Queen's Coll. Cambridge.
Dean of the Faculty of Applied Science, Professor of Civil Engineering and Applied Mechanics. — 31 McTavish Street.

CHARLES E. MOYSE, B.A. [London].
Professor of History and Associate Professor of English Language and Literature. — 265 University Street.

JOHN S. ARCHIBALD, M.A., B.C.L.
Professor of Criminal and Constitutional Law. — 113 Mackay Street.

EDMOND LAREAU, B.C.L.
Professor of Legal History. — 156 St. Denis Street.

MATTHEW HUTCHINSON, B.C.L.
Associate Professor of Civil Procedure. — Olivier Street, Cote St. Antoine.

J. EMERY ROBIDOUX, B.C.L.
Associate Professor of Real Estate Law. — 35 St. Hubert Street.

C. H. MCLEOD, Ma.E.
Professor of Descriptive Geometry and Superintendent of Meteorological Observatory. — Observatory McGill College.

FRANCIS J. SHEPHERD, M.D.
Demonstrator of Anatomy. — 85 Mansfield Street.

FRANK BULLER, M.D.
Lecturer on Diseases of the Eye and Ear. — 1351 St. Catherine Street

GEORGE H. CHANDLER, M.A.
Lecturer in Mathematics, Faculty of Applied Science. — 32 Lorne Avenue

LEWIS A. HART, M.A., B.C.L.
Lecturer on the Theory and Practice of Notarial Deeds and Proceedings.

JOHN ANDREW,
Instructor in Elocution. — 64 Roy Street

FREDERICK S. BARNJUM,
Instructor in Gymnastics. — 90 University Street.

General Statement.

SESSION OF 1881–82.

The Forty-ninth Session of the University, being the Twenty-ninth under the amended charter, will commence in the Autumn of 1881.

By Virtue of the Royal Charter, granted in 1821 and amended in 1852, the Governors, Principal and Fellows of McGill College constitute the Corporation of the University; and, under the statutes framed by the Board of Governors, with approval of the Visitor, have the power of granting Degrees in all the Arts and Faculties, in McGill College, and Colleges affiliated thereto.

The Statutes and Regulations of the University have been framed on the most liberal principles, with the view of affording to all classes of persons the greatest possible facilities for the attainment of mental culture and professional training. In its religious character the University is Protestant, but not denominational: and while all possible attention will be given to the character and conduct of students, no interference with their peculiar religious views will be sanctioned.

The educational work of the University is carried on in McGill College, Montreal, and in the several Affiliated Colleges and Schools.

I. McGILL COLLEGE.

THE FACULTY OF ARTS.—The complete course of study extends over four Sessions, of eight months each: and includes Classics and Mathematics, Experimental Physics, English Literature, Logic, Mental and Moral Science, Natural Science, and one Modern Language, or Hebrew; all which subjects are imperative in the first two years of the Course; but in the third and fourth years options are allowed in favour of the Honour Courses in Classics, Mathematics, Mental and Moral Science, Natural Science, and English Literature. Certain exemptions are also allowed to Professional Students. The course of study leads to the Degrees of B.A., M.A., and LL.D.

THE FACULTY OF APPLIED SCIENCE provides a thorough professional training, extending over three or four years, in Civil Engineering, Mechanical Engineering, Mining Engineering and Assaying, and Practical Chemistry, leading to the Degrees of Bachelor of Applied Science, Master of Engineering, and Master of Applied Science.

THE FACULTY OF MEDICINE.—The complete course of study in Medicine extends over four Sessions, of six months each, and leads to the Degree of M.D., C.M. There is also a Summer Course, which is optional.

THE FACULTY OF LAW.—The complete course in Law extends over three Sessions, of six months each, and leads to the degrees of B.C.L., and D.C.L.

II. AFFILIATED COLLEGES.

Students of Affiliated Colleges are matriculated in the University, and may pursue their course of study wholly in the Affiliated College, or in part in McGill College, and may come up to the University Examinations on the same terms with the Students of McGill College.

MORRIN COLLEGE, *Quebec*—Is affiliated in so far as regards Degrees in Arts and Law.

[Detailed information may be obtained from Rev. John Cook, D.D., Principal]

ST. FRANCIS COLLEGE, *Richmond*—Is affiliated in so far as regards the Intermediate Examinations in Arts.

[Detailed information may be obtained from Robert M. Smith, B, Sc., Principal, Richmond, P. Q.]

III. AFFILIATED THEOLOGICAL COLLEGES.

Affiliated Theological Colleges have the right of obtaining for their Students the advantage, in whole or in part, of the course of study in Arts, with such facilities in regard to exemptions as may be agreed on.

THE CONGREGATIONAL COLLEGE OF BRITISH NORTH AMERICA, *Montreal.*

THE PRESBYTERIAN COLLEGE OF MONTREAL, in connection with the Canada Presbyterian Church.

THE DIOCESAN COLLEGE OF MONTREAL.

THE WESLEYAN COLLEGE OF MONTREAL.

IV. AFFILIATED SCHOOLS.

THE MCGILL NORMAL SCHOOL provides the training requisite for Teachers of Elementary and Model Schools and Academies. Teachers trained in this School are entitled to Provincial Diplomas.

THE MODEL SCHOOLS OF THE MCGILL NORMAL SCHOOL are Elementary Schools, divided into a Boys' Department, Girls' Department, and Primary School.

COLLEGIATE INSTITUTES, ACADEMIES, and HIGH SCHOOLS may be affiliated in so far as regards Matriculation in Arts and Applied Science, under regulations which will be found on a subsequent page.

[Details of all the above will be found in the Annual Calendar of the University and in Announcements of the special Colleges, Faculties and Schools, which may be had on application to the Registrar of the University or the Principals or Secretaries of the several Colleges, &c.]

BENEFACTORS OF

McGill University, Montreal.

I. ORIGINAL ENDOWMENT, 1811.

THE HONOURABLE JAMES McGILL, who was born at Glasgow, 6th Oct., 1744, and died at Montreal, 19th Dec., 1813, by his last will and testament, under date 8th January, 1811, devised the Estate of Burnside, situated near the City of Montreal, and containing forty-seven acres of land, with the Manor House and Buildings thereon erected, and also bequeathed the sum of ten thousand pounds in money, unto the "Royal Institution for the Advancement of Learning," a Corporation constituted in virtue of an Act of Parliament passed in the Forty-first Year of the Reign of his Majesty, King George the Third, to erect and establish a University or College for the purpose of Education and the advancement of learning in the Province of Lower Canada, with a competent number of Professors and Teachers to render such Establishment effectual and beneficial for the purposes intended; requiring that one of the Colleges to be comprised in the said University, should be named and perpetually be known and distinguished by the appellation of McGill College."

The value of the above mentioned property was estimated at the date of the bequest at $120,000

II. UNIVERSITY BUILDINGS.

THE WILLIAM MOLSON HALL, being the west wing of the McGill College buildings, with the Museum Rooms, and the Chemical Laboratory and Class Rooms, was erected in 1861, through the munificent donation of the founder whose name it bears.

THE PETER REDPATH MUSEUM, the gift of the donor whose name it bears, was announced by him as a donation to the University in 1880.

III. ENDOWED CHAIRS.

THE MOLSON CHAIR OF ENGLISH LANGUAGE AND LITERATURE, in 1856, by the Honourable John Molson, Thomas Molson, Esq., and William Molson, Esq., —$20,000.

THE PETER REDPATH CHAIR OF NATURAL PHILOSOPHY, in 1871, by Peter Redpath, Esq.,—$20,000.

THE LOGAN CHAIR OF GEOLOGY, in 1871, by Sir W. E. Logan, LL.D., F.R.S., and Hart Logan, Esq.,—$20,000.

THE JOHN FROTHINGHAM CHAIR FOR MENTAL AND MORAL PHILOSOPHY, in 1873, by Miss Louisa Frothingham.—$20,000.

THE WILLIAM SCOTT CHAIR OF CIVIL ENGINEERING, endowed by the last will of the late Miss Barbara Scott, of Montreal $30,000, amount not yet received, 1st May, 1881.

IV. EXHIBITIONS AND SCHOLARSHIPS IN ARTS.

THE JANE REDPATH EXHIBITION, $100 annually—founded in 1868 by Mrs. Redpath of Terrace Bank, Montreal, and endowed with the sum of $1,667.

THE McDONALD SCHOLARSHIPS AND EXHIBITIONS, 10 in number—founded in 1871, by William C. McDonald, Esq.—Annual value, $1250.

THE CHARLES ALEXANDER SCHOLARSHIP, for Classics—founded in 1871, by Charles Alexander, Esq.—Annual value, $120.

THE TAYLOR SCHOLARSHIP—founded in 1871, by T. M. Taylor, Esq. Annnal value, $100—terminated in 1878.

THE SCOTT EXHIBITION—founded by the Caledonian Society of Montreal in commemoration of the Centenary of Sir Walter Scott, and endowed in 1872 with the sum of $1,100 subscribed by members of the Society, and other citizens of Montreal. The Exhibition is given annually in the Faculty of Applied Science.

THE BARBARA SCOTT SCHOLARSHIP OF CLASSICAL LANGUAGES AND LITERATURE, —founded by the last will of the late Miss Barbara Scott of Montreal, in the sum of $2000, amount not yet received, 1st May, 1881.

THE DAVID MORRICE SCHOLARSHIP—in the subject of Institutes of Medecine, in the Faculty of Medicine ; founded in 1881, value $100.

THE GEORGE HAGUE EXHIBITION—founded in 1881 in the Faculty of Arts, for the term of four years, value $125.

V. ENDOWMENTS OF MEDALS AND PRIZES.

In 1856 Henry Chapman, Esq., founded a gold medal to be named the "Henry Chapman Gold Medal," to be given annually in the graduating class in Arts. This Medal was endowed by Mr. Chapman in 1874, with the sum of $700.

In 1860 the sum of £200, presented to the College by H. R. H. the Prince of Wales, was applied to the foundation of a Gold Medal, to be called the "Prince of Wales Gold Medal," which is given in the graduating class for Honour Studies in Mental and Moral Philosophy.

In 1864 the "Anne Molson Gold Medal" was founded and endowed by Mrs. John Molson of Belmont Hall, Montreal, for an Honour Course in Mathematics and Physical Science.

In the same year the "Shakespeare Gold Medal," for an Honour Course to comprise and include the works of Shakespeare and the Literature of England from his time to the time of Addison, both inclusive, and such other accessory subjects as the Corporation may from time to time appoint—was founded and endowed by citizens of Montreal, on occasion of the three hundredth anniversary of the birth of Shakespeare.

In the same year the "Logan Gold Medal," for an Honour Course in Geology and Natural Science, was founded and endowed by Sir William Edmund Logan, LL.D., F.R.S., F.G.S., &c.

In 1865 the "Elizabeth Torrance Gold Medal," was founded and endowed by John Torrance, Esq., of St. Antoine Hall, Montreal, in memory of the late Mrs. John Torrance, for the best student in the graduating class in Law, and more especially for the highest proficiency in Roman Law.

In the same year, the "Holmes Gold Medal" was founded by the Medical Faculty, as a memorial of the late Andrew Holmes, Esq., M.D., LL.D., late Dean of the Faculty of Medicine, to be given to the best student in the graduating class in Medicine, who shall undergo a special examination in all the branches, whether Primary or Final.

In 1874 a Gold and Silver Medal were given by His Excellency the Earl of Dufferin, Governor General of Canada, for competition in the Faculty of Arts, and continued till 1878.

In 1878 the "Sutherland Gold Medal" was founded by Mrs. Sutherland of Montreal, in memory of her late husband Prof. William Sutherland, M.D., for competition in the classes of Theoretical and Practical Chemistry in the Faculty of Medicine, together with creditable standing in the Primary Examinations.

In 1875 the "Neil Stewart prize of $20 in Hebrew" was endowed by Neil Stewart, Esq., of Vankleek Hill, in the sum of $340.

In 1880 a Gold and a Silver Medal were given by His Excellency the Marquis of Lorne, Governor General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science.

VI. SUBSCRIPTIONS TO THE GENERAL ENDOWMENT.

1856.

John Gordon McKenzie, Esq...	$2000	Charles Alexander, Esq.....	$600
Ira Gould, Esq.....	2000	Moses E. David, Esq.....	600
John Frothingham, Esq.....	2000	Wm. Carter, Esq.....	600
John Torrance, Esq.....	2000	Thomas Paton, Esq.....	600
James B. Greenshields, Esq....	1200	Wm. Workman, Esq.....	600
William Busby Lambe, Esq....	1200	Honourable Sir A. T. Galt.....	600
Sir George Simpson, Knight....	1000	Honourable Luther H. Holton..	600
Henry Thomas, Esq.....	1000	Henry Lyman, Esq.....	600
John Redpath, Esq.....	1000	David Torrance, Esq.....	600
James McDougall, Esq.....	1000	Edwin Atwater, Esq.....	600
James Torrance, Esq.....	1000	Theodore Hart, Esq	600
Honourable James Ferrier.....	1000	William Forsyth Grant, Esq....	600
John Smith, Esq.....	1000	Robert Campbell, Esq.....	600
Harrison Stephens, Esq.....	1000	Alfred Savage, Esq.....	600
Henry Chapman, Esq.....	600	James Ferrier, Jr., Esq.....	600
Honourable Peter McGill.....	600	William Stephens, Esq.....	600
John James Day, Esq.....	600	N. S. Whitney, Esq.....	600
Thomas Brown Anderson, Esq.	600	William Dow, Esq.....	600
Peter Redpath, Esq.....	600	William Watson, Esq.....	600
Thomas M. Taylor, Esq.....	600	Edward Major	600
Joseph McKay, Esq.....	600	Honorable Charles Dewey Day.	200
Donald Lorn McDougall, Esq..	600	John R. Esdaile, Esq.....	
Honourable Sir John Rose.....	600		

1871.

William Molson, Esq	$5000	T. W. Ritchie, Esq.....	$600
William C. McDonald, Esq....	5000	A. & W. Robertson, Esqs.....	600
Thomas Workman, Esq.....	5000	Messrs. Sinclair, Jack & Co....	250
John Frothingham, Esq.....	5000	John Reddy, Esq., M.D.....	100
J. H. R. Molson, Esq.....	2000	Wm. Lunn, Esq.....	100
John McLennan, Esq.....	1000	Kenneth Campbell, Esq.....	100
B. Gibb, Esq.....	600	R. A. Ramsay, Esq.....	100
W. Notman, Esq	600	William Rose, Esq.....	50

VII. ENDOWMENT FOR FACULTY OF APPLIED SCIENCE.

1871.

Daniel Torrance, Esq.	$5000
George Moffatt, Esq.	1000
Charles J. Brydges, Esq.	1000
Robert J. Reekie, Esq.	1000

VIII. ANNUAL SUBSCRIPTIONS IN AID OF THE FACULTY OF APPLIED SCIENCE.

1871.

Hon. James Ferrier, (per annum, for 10 years)	$100
Peter Redpath, Esq., (per annum, for 10 years)	400
John H. R. Molson, Esq., (per annum, for 10 years)	400
George H. Frothingham, Esq., (per annum, for 7 years)	400
T. James Claxton, Esq., (per annum, 6 years)	100
Donald Ross, Esq., (per annum, for 5 years)	50

1878–9.

Miss Mary Frothingham, (per annum, for 3 years)	$400
H. McLennan, Esq., (per annum for 5 years)	100
A. F. Gault, Esq., do do	100
Gilbert Scott, Esq., for 2 years	100
Joseph Hickson, Esq., do	100
Principal Dawson, do	300
His Excellency the Marquis of Lorne	500
Mrs. Redpath (Terrace Bank)	100

IX. SUBSCRIPTIONS FOR SPECIAL OBJECTS.

Subscriptions for the purchase of Philosophical Apparatus, 1867.

William Molson, Esq.	$500	John Frothingham, Esq.	100
John H. R. Molson, Esq.	500	David Torrance, Esq.	100
Peter Redpath, Esq.	500		
George Moffatt, Esq.	250		$2,050
Andrew Robertson, Esq.	100		

Subscriptions for the erection of a fire-proof Building for the Carpenter Collection of Shells, 1868.

Peter Redpath, Esq.	$500	Wm. Dow, Esq.	$100
William Molson, Esq.	500	Thomas Rimmer, Esq.	100
Harrison Stephens, Esq.	100	Andrew Robertson, Esq.	100
Robert J. Reekie, Esq.	100	Mrs. Redpath	100
John H. R. Molson, Esq.	100	Benaiah Gibb, Esq.	50
Sir William E. Logan, F.R.S.	100	Honourable John Rose	50
John Molson, Esq.	100		$2,180
Thos. Workman, Esq., M.P.	100		
Geo. H. Frothingham, Esq.	100		

Subscriptions for the erection of the Lodge and Gates.

William Molson, Esq.	$100	James A. Mathewson, Esq.	$ 100
John H. R. Molson, Esq.	100	Peter Redpath, Esq.	100
William Workman, Esq.	100	G. H. Frothingham, Esq.	100
Joseph Tiffin, Jr., Esq.	100	G. D. Ferrier, Esq.	100
Thos J. Claxton, Esq.	100	Geo. W. Warner, Esq.	100
James Linton, Esq.	100	John Smith, Esq	100
William McDougall, Esq.	100	Charles Alexander, Esq	100
Charles J. Brydges, Esq.	100	J. Evans, Esq.	100
George Drummond, Esq.	100	Henry Lyman, Esq.	100
Thomas Rimmer, Esq.	100		
William Dow, Esq	100		$2,100
John Frothingham, Esq.	100		

Subscriptions for the internal fittings of the Library and Museum of the Faculty of Medicine, 1872.

G. W. Campbell, A.M., M.D.	$1200	Robert Craik, M.D.	$ 200
Wm. E. Scott, M.D.	200	Geo. E. Fenwick, M.D.	200
Wm. Wright, M.D.	200	Joseph M. Drake, M.D.	200
Robert P. Howard, M.D.	200	George Ross, M.A., M.D.	50
Duncan C. McCallum, M.D.	200		

Library and Museum Funds.

Wm. Molson, Esq., for Library Fund	$4000	Hon. F. W. Torrance, Mental and Moral Philosophy Book Fund	$1000
Wm. Molson, Esq., for Museum Fund	2000		

Subscriptions for Library, Museum and Apparatus.

Mrs. G. H. Frothingham, for the arrangement of Dr. Carpenter's Collection of Mazatlan Shells	$233	T. J. Claxton, Esq., £50 sterling for additions to the Museum	$250
		John Thorburn, M.A., for the Library	$90

A Lady, for the purchase of Mining Models	$1000
Thos. McDougall, Esq., for the same	25
J. Livesey, Esq., through Dr. Harrington, for the same	50
George Stephen, Esq., for the same	50
Charles Gibb, B.A., donation for Apparatus in Applied Science	50
Andrew Drummond, Esq., to Library Fund of Faculty of Applied Science	25
A Telescope and Astronomical Instruments, the gift of Charles T. Blackman, Esquire, of Montreal, and called after his name	

Subscriptions for Physiological Laboratory of Medical Faculty, 1879.

Dr. Campbell	$ 100	Dr. Ross	50
Dr. Howard	100	Dr. Roddick	50
Dr. Craik	100	Dr. Buller	50
Dr. McCallum	100	Dr. Gardner	50
Dr. Drake	100	Dr. Osler	50
Dr. Godfrey	100		
Dr. McEachran, F.R.C.V.S.	100		$ 950

Hon. C. Dunkin, M.P., in aid of the chair of Practical Chemistry $1,200
Principal Dawson, in aid of the same $1,200
R. Redpath, Esq., do do $226

T. M. Thompson, Esq., $250 for two Exhibitions in September, 1871; $200 for two Exhibitions in 1872 ..... $450
Rev. Colin C. Stewart, for the "Stewart Prize in Hebrew.". $60
Terminated in 1875.

R. A. Ramsay, M.A., B.C.L., to defray the expenses of re-erecting the tomb of the late Hon. James McGill $150 00

X. ENDOWMENT, HELD IN TRUST BY THE BOARD OF ROYAL INSTITUTION.

The "Hannah Willard Lyman Memorial Fund," contributed by subscription of former pupils of Miss Lyman, and invested as a permanent Endowment, to furnish annually a Scholarship or Prize in a College for Women affiliated to the University; or in Classes for the Higher Education of Women approved by the University. The amount of the fund is at present $1,100.

XI. SPECIAL COLLECTIONS OF BOOKS PRESENTED TO THE LIBRARY.

1. The Peter Redpath Collection of Historical Books—presented by Peter Redpath, Esq., of Montreal, 2198 Volumes.
2. The Robson Collection of works in Archæology and general Literature, presented by Dr. John Robson of Warrington, England, 3436 Volumes.
3. The Charles Alexander Collection of Classical Works, presented by C. Alexander, Esq., of Montreal, 221 Volumes.
4. Frederick Griffin, Esq., Q.C., Collection of Books, being the whole of his Library, bequeathed by his will, 2692 Volumes.

XII. SPECIAL COLLECTIONS PRESENTED TO THE MUSEUM.

1. The Holmes Herbarium—presented by the late Andrew F. Holmes, M.D.
2. The Carpenter Collection of Shells—presented by the late P. P. Carpenter, Ph.D.
3. The Collection of Casts of Ivory Carvings issued by the Arundel Society—presented by Henry Chapman, Esq.

(See also "List of Donations to the Library and Museum," printed annually in the calendar.)

LIST OF SUBSCRIPTIONS TO THE FUND OF THE GRADUATES SOCIETY, FOR THE ENDOWMENT OF THE LIBRARY.

The Graduates' Society of the University, in 1876, passed the following Resolution :—

"*Resolved*:—"That the members and graduates be invited to subscribe to "a fund for the endowment of the Libraries of the University ; said fund to be "invested and the proceeds applied under the supervision of the Council of the "Society in annual additions to the Libraries ; an equitable division of said "proceeds to be made by the Council between the University Library and those "of the Professional Faculties."

In terms thereof, the following subscriptions have been announced to date May 1st, 1881).

(*alphabetically arranged.*)

O'Hara Baynes, B.C.L.	$ 50	in 2 Annual Instalments.
M. B. Bethune, M.A., B.C.L.	50	Cash
Alex. D. Blackader, B.A., M.D.	50	in 5 "
A. A. Browne, B.A., M.D.	50	in 5 "
J. D. Cline, B.A., M.D.	25	Cash.
Lemuel Cushing, LL.D., B.C.L.	25	"
J. R. Dougall, M.A.	50	in 5 "
R. W. Ells, M.A.	50	in 5 "
Rev. J. Empson, M.A.	25	Cash.
Wm. Gardner, M.D.	100	in 4 "
Charles Gibb, B.A.	50	in 2 "
F. E. Gilman, LL.D., B.C.L.	100	Cash.
C. H. Gould, B.A.	100	in 5 "
J. S. Hall, B.A., B.C.L.	50	in 2 "
Rev. W. Hall, M.A.	10	Cash.
B. J. Harrington, B.A., Ph.D.	50	in 2 "
F. W. Hicks, M.A.	50	in 2 "
Edward Holton, B.C.L.	100	in one sum.
M. Hutchinson, B.C.L.	5	Cash.
F. J. Keller, B.C.L.	25	Cash
F. W. Kelley, M.A., Ph.D.	100	in 4 "
Rev. R. Laing, M.A.	100	in 4 "
F. S. Lyman, B.A., B.C.L.	50	in 2 "
H H. Lyman, M.A.	100	in 5 "
Wm. Molson, M.D.	100	in 5 "
Fred. MacKenzie, B.C.L.	100	in one sum.
J. J. MacLaren, M.A., B.C.L.	100	in 4 "
D. R. McCord, M.A., B.C.L.	100	in 4 "
James McGregor, LL.D.	80	in 4 "
C. H. MacLeod, Ma.E.	50	in 5 "
D. MacMaster, B.C.L.	100	in 4 "
Wm. Osler, M.D.	100	in 4 "
R. A. Ramsay, M.A., B.C.L.	100	Cash.
Rev. E. I. Rexford, B.A.	50	in 5 "
Alex. Robertson, B.A.	100	in 4 "
S. P. Robins, LL.D.	50	Cash.
T. G. Roddick, M.D.	100	in 5 "
George Ross, M.A., M.D.	100	in 4 "
F J. Shepherd, M.D.	100	in 5 "
J. F. Torrance, B.A., B. App. Sci.	100	in 5 "
N. W. Trenholme, M.A., B.C.L.	100	in 4 "
Total to date	$2,895	

ACADEMICAL YEAR 1881-82.

SEPTEMBER, 1881.

1	Thursday	Normal School opens.
2	Friday	
3	Saturday	
4	SUNDAY	
5	Monday	
6	Tuesday	
7	Wednesday	Meeting of Norm. Sch'l Committee.
8	Thursday	
9	Friday	
10	Saturday	Meeting of Faculty of Law.
11	SUNDAY	
12	Monday	
13	Tuesday	
14	Wednesday	
15	Thursday	Meetings Fac. Arts & App. Science. Mat. and Supp. Exn's in Classics. Exhib. and Scholarship Examin.
16	Friday	Mat. & Supp. Exn's in Mathematics.
17	Saturday	Exhibition and Scholars... Exn's.
18	SUNDAY	
19	Monday	Mat. & Supp Exn's in English, Logic. Men. & Mor. Phil. Exh. & Sch. Ex
20	Tuesday	Mat. and Supp. Ex'ns in Modern Languages and Natural Science. Exhibition and Scholarship Ex'ns.
21	Wednesday	Lect. in Arts & App. Science begin.
22	Thursday	Meeting of Faculty of Arts.
23	Friday	
24	Saturday	Meeting of Governors.
25	SUNDAY	
26	Monday	
27	Tuesday	Summer Essays in App. Sci. given in.
28	Wednesday	
29	Thursday	Examination for Scott Exhibition.
30	Friday	

OCTOBER, 1881.

1	Saturday	Session of Med. Fac. begins. Matriculation Examin in Medicine.
2	SUNDAY	Meeting of Faculty of Law.
3	Monday	Meeting of Faculty of Arts.
4	Tuesday	Session of Law Fac. begins.
5	Wednesday	Meeting of Norm. Sch'l Committee.
6	Thursday	Founder's Birthday.
7	Friday	
8	Saturday	The William Molson Hall open., 1862.
9	SUNDAY	
10	Monday	
11	Tuesday	
12	Wednesday	
13	Thursday	Meeting of Fac. of Applied Science.
14	Friday	
15	Saturday	
16	SUNDAY	
17	Monday	Meeting of Faculty of Arts.
18	Tuesday	
19	Wednesday	
20	Thursday	
21	Friday	
22	Saturday	Meeting of Governors.
23	SUNDAY	
24	Monday	
25	Tuesday	
26	Wednesday	Regular Meeting of Corporation. School Examiners appointed. Reports on Scholarships & Exhib. Accounts audited.
27	Thursday	
28	Friday	
29	Saturday	
30	SUNDAY	
31	Monday	Meeting of Faculty of Arts.

NOVEMBER, 1881.

1	Tuesday	
2	Wednesday	Meeting of Nor. School Committee.
3	Thursday	
4	Friday	
5	Saturday	Meeting of Faculty of Law.
6	SUNDAY	
7	Monday	
8	Tuesday	
9	Wednesday	
10	Thursday	Meeting of Faculty App. Science.
11	Friday	
12	Saturday	
13	SUNDAY	
14	Monday	Meeting of Faculty of Arts.
15	Tuesday	
16	Wednesday	Annual University Lecture.
17	Thursday	
18	Friday	
19	Saturday	
20	SUNDAY	
21	Monday	
22	Tuesday	
23	Wednesday	
24	Thursday	
25	Friday	
26	Saturday	Meeting of Governors.
27	SUNDAY	
28	Monday	Meeting of Faculty of Arts.
29	Tuesday	
30	Wednesday	

DECEMBER, 1881.

1	Thursday	
2	Friday	
3	Saturday	Meeting of Faculty of Law.
4	SUNDAY	
5	Monday	
6	Tuesday	
7	Wednesday	Meeting of Nor. School Committee.
8	Thursday	Meeting of Fac. of App. Science.
9	Friday	Lectures in Arts end.
10	Saturday	
11	SUNDAY	Christmas Examinations begin.
12	Monday	
13	Tuesday	
14	Wednesday	
15	Thursday	Lectures in App. Science end.
16	Friday	
17	Saturday	
18	SUNDAY	
19	Monday	
20	Tuesday	
21	Wednesday	Christmas Vacation begins.
22	Thursday	
23	Friday	Meeting of Governors.
24	Saturday	Christmas-Day.
25	SUNDAY	
26	Monday	
27	Tuesday	
28	Wednesday	
29	Thursday	
30	Friday	
31	Saturday	

JANUARY, 1882.

1 SUNDAY	
2 Monday	
3 Tuesday	
4 Wednesday	Meeting of Nor. Sch'l Committee.
5 Thursday	Chrismas Vacation ends. Meeting Fac. Arts ; Lec. in Arts, Law, Med. & App. Science re-commence.
6 Friday	
7 Saturday	Meeting of Faculty of Law.
15 SUNDAY	
9 Monday	Meeting of Faculty of Arts.
10 Tuesday	
11 Wednesday	
12 Thursday	Meeting of Fac. of Applied Science.
13 Friday	
14 Saturday	
22 SUNDAY	
16 Monday	
17 Tuesday	
18 Wednesday	
19 Thursday	
20 Friday	
21 Saturday	
8 SUNDAY	
23 Monday	Meeting of Faculty of Arts.
24 Tuesday	
25 Wednesday	Regular Meeting of Corporation. Examiner sappointed. Annual Report to Visitor.
26 Thursday	
27 Friday	Theses for M.A. & L.L.D. to be sent in to the Dean.
28 Saturday	Meeting of Governors.
29 SUNDAY	
30 Monday	
31 Tuesday	

FEBRUARY, 1882.

1 Wednesday	
2 Thursday	
3 Friday	
4 Saturday	Thses for Degree of D.C.L. to be sent in to Dean of Fac. of Law.
5 SUNDAY	Meeting of Nor. School Committee
6 Monday	Meeting of Examiners.
7 Tuesday	
8 Wednesday	Meeting of Faculty of Law.
9 Thursday	
10 Friday	
11 Saturday	Meeting of Faculty of Arts.
12 SUNDAY	
13 Monday	Meeting of Fc. of Applied Science.
14 Tuesday	
15 Wednesday	
16 Thur day	Supplemental Examinations.
17 Friday	
18 Saturday	
19 SUNDAY	Meeting of Faculty of Arts.
20 Monday	
21 Tuesday	No lectures.
22 Wednesday	
23 Thursday	
24 Friday	Meeting of Governors.
25 Saturday	
26 SUNDAY	
27 Monday	
28 Tuesday	

MARCH, 1882.

1 Wednesday	Theses for Degree of B.C.L. to be sent in to Dean of Faculty. Meet'g of Norm. Sch'l Committee.
2 Thursday	
3 Friday	
4 Saturday	Meeting of Faculty of Law.
5 SUNDAY	
6 Monday	Meeting of Faculty of Arts.
7 Tuesday	
8 Wednesday	
9 Thursday	Examinations in Law. Meeting of Faculty of Applied Science.
10 Friday	Examinations in Law.
11 Saturday	
12 SUNDAY	
13 Monday	Examinations in Law.
14 Tuesday	Examinations in Law.
15 Wednesday	Examinations in Law.
16 Thursday	Examinations in Law.
17 Friday	Examinations in Law. Lectures in Medicine end.
18 Saturday	Exam. in Botany, Med. Faculty.
19 SUNDAY	
20 Monday	Meeting of Faculty of Arts.
21 Tuesday	Primary Examinations in Med.
22 Wednesday	Primary Examinations in Med.
23 Thursday	
24 Friday	Final Examinations in Medicine.
25 Saturday	Final Fxaminations in Medicine. Meeting of Governors.
26 SUNDAY	
27 Monday	Meeting of Faculty of Arts. Reports of Attendance on Lectures.
28 Tuesday	
29 Wednesday	
30 Thursday	Lect. in Arts and App. Science end.
31 Friday	Convoc for Degrees in Law & Med.

APRIL, 1882.

1 Saturday	
2 SUNDAY	
3 Monday	Meeting of Faculty of Arts. B. A Honour Examinations begin.
4 Tuesday	Ordinary Examination in Arts and Applied Science begin.
5 Wednesday	Meet'g of Norm. Sch'l Committee.
6 Thursday	
7 Friday	Good-Friday. Easter Vaca. begins.
8 Saturday	
9 SUNDAY	Easter-Day.
10 Monday	
11 Tuesday	Easter Vacation ends.
12 Wednesday	
13 Thursday	Meeting of Fac. of Applied Science.
14 Fr day	
15 Saturday	
16 SUNDAY	
17 Monday	
18 Tuesday	
19 Wednesday	
20 Thursday	Meeting of Fac. of Arts. Meeting of Examiners.
21 Friday	
22 Saturday	Meeting of Governors.
23 SUNDAY	
24 Monday	
25 Tuesday	
26 Wednesday	Regular Meeting of Corporation.
27 Thursday	
28 Friday	
29 Saturday	Adjourned Meet'g of Corporation. Meet'g of Examin's. Declaration of Results of Examinations.
30 SUNDAY	

MAY, 1882.

1 Monday	
2 Tuesday	Convocation for Degrees in Arts & Appl. Science.
3 Wednesday	Normal School Committee.
4 Thursday	
5 Friday	
6 Saturday	
7 SUNDAY	
8 Monday	
9 Tuesday	
10 Wednesday	
11 Thursday	
12 Friday	
13 Saturday	
14 SUNDAY	
15 Monday	
16 Tuesday	
17 Wednesday	Meeting Examiners for School Examinations.
18 Thursday	
19 Friday	
20 Saturday	
21 SUNDAY	
22 Monday	
23 Tuesday	
24 Wednesday	Queen's Birth-Day.
25 Thursday	
26 Friday	
27 Saturday	Meeting of Governors.
28 SUNDAY	Whit-Sunday.
29 Monday	
30 Tuesday	
31 Wednesday	

JUNE, 1882.

1 Thursday	Exams. in Normal Schoo begin. Examinations for Certificate of Associate in Arts begin.
2 Friday	
3 Saturday	
4 SUNDAY	
5 Monday	
6 Tuesday	
7 Wednesday	Normal School Committee.
8 Thursday	
9 Friday	
10 Saturday	
11 SUNDAY	
12 Monday	
13 Tuesday	
14 Wednesday	
15 Thursday	
16 Friday	Declaration of results of School Examinations.
17 Saturday	
18 SUNDAY	
19 Monday	
20 Tuesday	
21 Wednesday	
22 Thursday	
23 Friday	
24 Saturday	Meeting of Governors.
25 SUNDAY	
26 Monday	
27 Tuesday	
28 Wednesday	Regular Meeting of Corporation.
29 Thursday	Report of Normal School.
30 Friday	Normal School closes for Summer Vacation.

JULY, 1882.

1 Saturday	
2 SUNDAY	
3 Monday	
4 Tuesday	
5 Wednesday	
6 Thursday	
7 Friday	
8 Saturday	
9 SUNDAY	
10 Monday	
11 Tuesday	
12 Wednesday	
13 Thursday	
14 Friday	
15 Saturday	
16 SUNDAY	
17 Monday	
18 Tuesday	
19 Wednesday	
20 Thursday	
21 Friday	
22 Saturday	
23 SUNDAY	
24 Monday	
25 Tuesday.	
26 Wednesday	
27 Thursday	
28 Friday	
29 Saturday	
30 SUNDAY	
31 Monday	

AUGUST, 1882.

1 Tuesday	
2 Wednesday	
3 Thursday	
4 Friday	
5 Saturday	
6 SUNDAY	
7 Monday	
8 Tuesday	
9 Wednesday	
10 Thursday	
11 Friday	
12 Saturday	
13 SUNDAY	
14 Monday	
15 Tuesday	
16 Wednesday	
17 Thursday	
18 Friday	
19 Saturday	
20 SUNDAY	
21 Monday	
22 Tuesday	
23 Wednesday	
24 Thursday	
25 Friday	
26 Saturday	
27 SUNDAY	
28 Monday	
29 Tuesday	
30 Wednesday	
31 Thursday	

EXAMINATIONS.—1881-82.

Faculty of Arts.

CHRISTMAS, 1881.

Dec.	DAYS.	FIRST YEAR.	SECOND YEAR.	THIRD YEAR.	FOURTH YEAR.
12	Mon.	Greek.	Greek.	Math. Physics.	Math. Physics.
13	Tues.	Latin.	Latin.	Moral Philosophy.	
14	Wed.		Botany.	English.	Metaphysics.
15	Thur.	Mathematics.	French. P. M.	Exp. Physics.	Exp. Physics.
16	Frid.	English.	Logic.	Greek.	English.
19	Mon.	Chemistry.	Mathemathics.	Latin.	Geology.
20	Tues.	French,	English & German.	Zoology.	German.
21	Wed.	German & Hebrew	Hebrew.	French, German & Hebrew.	French & Hebrew.

SESSIONAL AND HONOUR EXAMINATIONS, 1882.

Apr.	DAYS.	FIRST YEAR.	SECOND YEAR.	THIRD YEAR.	FOURTH YEAR.
3	Mon.			B. A. Honour Ex.	
4	Tues.	Greek.	Greek.	Math. Physics.	Metaphysics.
5	Wed.	Latin.	Latin.	Math. Physics.	Metaphysics.
6	Thur.	Greek & Roman History.	Latin Prose Com.	Exp. Physics.	Exp. Physics.
12	Wed.	Chemistry.	English.	Moral Philosophy.	English.
13	Thur.				B. A. Honour Ex.
14	Frid.	English.	Mathematics.	Greek.	Math. Physics.
17	Mon.		Mathematics.	Latin.	Math. Physics.
18	Tues.	French & Hebrew.	French & Hebrew.	Latin Prose Comp.	Geology.
19	Wed.	German.	German.	Zoology.	Greek.
20	Thur.	Mathematics.	Botany.	French.	Latin.
21	Frid.	Mathematics.	Logic.	English.	History.
24	Mon.			German & Hebrew.	French, German, Hebrew and B. A. Honour Ex.
25	Tues.	Honour Exam's.	Honour Exam's.	Honour Exam's.	B. A. Honour Ex.
27	Thur.	Honour Exam's.	Honour Exam's.	Honour Exam's.	B. A. Honour Ex.

All Examinations begin at 9 a. m., and 2 p. m., unless otherwise specified. The Examinations are generally limited to the morning.

EXAMINATIONS.—1881-82.

Faculty of Applied Science.

CHRISTMAS, 1881.

DEC.	DAYS.	FIRST YEAR.	SECOND YEAR.	THIRD YEAR.	FOURTH YEAR.
— 15	Thursday,	Mathematics.	Exp. Physics. French [p.m.]	Exp. Physics.	Mathematics.
— 16	Friday,	English.			
— 19	Saturday,	Chemistry.	Chemistry.	Geology.	
— 20	Monday,	French.	Zoology. German [p.m.]	French.	Materials.
— 21	Tuesday,	German.		German.	

SESSIONAL, 1882.

APRIL	DAYS.	FIRST YEAR.	SECOND YEAR.	THIRD YEAR.	FOURTH YEAR.
— 3	Monday,	Drawing.	Drawing.	Drawing.	Mineralogy [Advanced]
— 4	Tuesday,		Essay.	Essay.	Essay.
— 5	Wednesday,			Applied Mechanics	Applied Mechanics
— 6	Thursday,		Exp. Physics.	Exp. Physics.	
— 10	Monday,		Materials.	Materials.	
— 11	Tuesday,	Mathematics.	Mathematics.	Mathematics.	
— 12	Wednesday,	Chemistry.			Construction. Metallurgy.
— 13	Thursday,		Surveying. Mechanical Work	Surveying, Mining. Mechanical Work.	
— 14	Friday,	English.	English.		Steam.
— 15	Saturday,			Mineralogy, [Advanced.]	
— 17	Monday,		Mechanism.	Mach. & Millwork.	Hydraulics.
— 18	Tuesday,	French.	French.	Geology. Mineralogy.	
— 19	Wednesday,	German.	Zoology. German [p.m.]		
— 20	Thursday,		Botany.	Applied Mechanics	Applied Mechanics
— 22	Saturday,	Mathematics.	Mathematics.	Mathematics.	
— 24	Monday,			German.	Applied Mechanics [Advanced.]
— 25	Tuesday,		Prac. Chemistry.	Prac. Chemistry. Assaying.	Assaying.
— 26	Wednesday,			Prac. Hydraulics	Prac. Hydraulics.
— 27	Thursday,			Mathematics.	
— 28	Friday,			Applied Mechanics [Advanced.]	Applied Mechanics [Advanced.]

Faculty of Arts.

THE PRINCIPAL (Ex-officio).

Professors :—LEACH. DE SOLA. DAWSON. MARKGRAF. JOHNSON.

Professors :—CORNISH. DAREY. MURRAY. HARRINGTON. MOYSE.

Dean of the Faculty :—Ven. ARCHDEACON LEACH, D.C.L., LL.D.

Vice-Dean :—ALEXANDER JOHNSON, LL.D.

Librarian :—Professor MARKGRAF, M.A.

[CONTENTS.—*Course of Study*, § I. ; *Matriculation*, &c., § II. ; *Exhibitions*, &c., § III. ; *Examinations*, &c., § IV. ; *Exemptions*, &c., § V. ; *Medals*, &c., § VI. ; *Licensed Boarding Houses*, § VII. ; *Attendance*, &c., § VIII. ; *Library*, &c., § IX. ; *Fees*, &c., § X. ; *Courses of Lectures*, § XI.]

The next Session of this Faculty will commence on September 15th, 1881, and will extend to May 2nd, 1882.

§ I. COURSE OF STUDY.

1. Undergraduates are arranged according to their standing, as Students of the First, Second, Third or Fourth Year. They are required to attend all the courses of Lectures appointed for their several years, under the Regulations as to attendance and conduct stated in § VIII ; the only exceptions are those in favour of Honour and Professional Students, stated in § V.

ORDINARY COURSE FOR THE DEGREE OF B.A.

First Year.—Classics ; French or German ; English Language and Literature ; Pure Mathematics ; History ; Elementary Chemistry.

Second Year.—Classics ; French or German ; English Literature * ; Logic and Elementary Psychology ; Pure Mathematics ; Botany.

Third Year.—Classics ; Rhetoric ; Moral Philosophy ; Mixed Mathematics ; Experimental Physics ; Zoology.

Fourth Year.—Classics ; English Literature ; History ; Mental Philosophy ; Mixed Mathematics ; Experimental Physics ; Mineralogy and Geology.

[* NOTE.—For University Examinations ; Lectures Optional.]

Undergraduates are required to study either French or German for two years (viz., in the First and Second Years), taking the same language in each year. Any Student failing to pass the Examination at the end of the Second Year will be required to pass a Supplemental Examination, or to take an additional Session in the Language in which he has failed. In addition to the obligatory, there are other lectures, attendance on which is optional.

Students who intend to join any Theological School, on giving written notice to this effect at the beginning of the First Year, may take Hebrew instead of French or German.

The Faculty may permit any Student to take Spanish instead of French or German.

2. At the examination for the Degree of B.A., Honours are given in the following subjects, for which special Honour Courses are provided:—[For details see under § XI.]

1. *Classical Languages and Literature.*
2. *Mathematics and Physics.*
3. *Logic and Mental and Moral Philosophy.*
4. *English Language, Literature, and History.*
5. *Geology and other Natural Sciences.*

Students taking B.A. Honours in any of the above Courses may omit two of the ordinary subjects in the Degree Examination, under the conditions stated in § V., *II.*

Honours are given in the above subjects in the Third Year also, and in Mathematics in the First and Second Years as well.

---

§ II. MATRICULATION AND ADMISSION.

1. Candidates for Matriculation as Undergraduates are required to present themselves to the Dean of the Faculty, on the 15th of September, for examination; they may, however, enter after the commencement of the Session, if, on examination, found qualified to join the classes.

The subjects of examination for entrance into the First Year are Classics, Mathematics and English.

In Classics.—Greek.—Xenophon, Anabasis, Book I.; or, Homer, Iliad, Book I.; Greek Grammar.

Latin.—Cicero, Orations I. and II. against Catiline; or, Virgil, Æneid, Book I.; Latin Grammar.

In Mathematics.—Arithmetic; Algebra, to Simple Equations, inclusive; Euclid's Elements, Books I., II., III.

In English.—Writing from Dictation. A paper on English Grammar *including Analysis*. A paper on the leading events of English History.

[Associates in Arts who, at their special Examination, have passed in Latin, Greek, Algebra and Geometry, are not required to present themselves for the Matriculation Examination.]

2. Candidates not matriculated in the University, or Partial Students of the First Year, may be admitted to the standing of students of the Second Year, provided that they pass the Sessional Examinations of the First Year, or an examination in the following subjects at the beginning of the Second Year:—

In Classics.—Greek.—Homer, Book VI.; Xenophon, Anabasis, Book I.; Grammar and Prose Composition.

Latin.—Virgil, Æneid, Book VI.; Cicero, Orations IV. against Catiline; Grammar and Prose Composition.

[An equivalent amount of other books or other authors in Latin and Greek than those named above may be accepted by the Examiners, for entrance into either First or Second Year.]

In Mathematics.—

Euclid.—Books I., II., III., IV., VI., with defs. of Book V. (omitting Propositions 27, 28, 29, of Book VI.)

Algebra.—To end of Quadratic equations (Colenso's Alg.)

Trigonometry.—Galbraith and Haughton's Trigonometry, Chaps. 1, 2, 3, 4, 6, to beginning of numerical solution of plane triangles.

Arithmetic.—Elementary rules, Proportion, Interest, Discount, &c., Vulgar and Decimal Fractions, Square Root.

In English Literature.—Writing from Dictation, English Grammar, including Analysis, English Composition, British History (Collier).

In French.—De Fivas, Grammaire des Grammaires as far as Syntax; or (instead of French) *German*—in which knowledge sufficient to enable the Candidate to join the regular class will be required.

In Chemistry.—The Chemistry of the non-metallic elements, or of the more common metals.

[*Note.*—Candidates unable to pass in French or German are not excluded; but they are required to begin German, and to continue the study of it for two years. Candidates unable to pass in Chemistry are required to attend such of the lectures in the subject as are open to them, and to pass an examination at the end of the second year.]

3. Students of other Universities may be admitted, on the production of Certificates, to a like standing in this University, after examination by the Faculty.

4. PARTIAL STUDENTS.—Candidates for Matriculation as Partial Students, taking three or more Courses of Lectures, or as Students in any Special Course, will be examined in the subjects necessary thereto, as may from time to time be determined by the Faculty.

5. OCCASIONAL STUDENTS.—Persons desirous of taking one or two Courses of Lectures, as Occasional Students, may apply to the Vice-Dean for entry in his Register, and may procure from the Secretary tickets for the Lectures they desire to attend.

Every student is expected to present, on his entrance, a written intimation from his parent or guardian, of the name of the minister of religion under whose care and instruction it is desired that the student shall be placed, who will thereupon be invited to place himself in communication with the Faculty on the subject. Failing such intimation from his parent or guardian, the Faculty will endeavour to establish befitting relations.

---

§ III. SCHOLARSHIPS AND EXHIBITIONS.

GENERAL REGULATIONS.

1. A Scholarship is tenable for *two* years. An Exhibition for *one* year.

2. Scholarships are open for competition to Students who have passed the University Intermediate Examination, provided that not more than three Sessions have elapsed since their Matriculation ; and also to Candidates who have obtained what the Faculty may deem equivalent standing in some other University.

3. Scholarships are divided into two classes :—[1] *Science* Scholarships ; [2] *Classical and Modern Language* Scholarships. The subjects of Examination for each are as follows :—

Science Scholarships.—Differential and Integral Calculus : Analytic Geometry ; Plane and Spherical Trigonometry ; Higher Algebra and Theory of Equations ; Botany ; Chemistry ; Logic.

Classical and Modern Language Scholarships.—Greek ; Latin ; English Composition ; English Language, Literature and History ; French.

4. Exhibitions are assigned to the First and Second Years.

First Year Exhibitions are open for competition to candidates for entrance into the First Year.

Second Year Exhibitions are open for competition to Students who have passed the First Year Sessional Examination, provided that not more than two Sessions have elapsed since their Matriculation ; and also to candidates for entrance into the Second Year.

The subjects of Examination are as follows :—

First Year Exhibitions.—Classics, Mathematics, English.

Second Year Exhibitions.—Classics, Mathematics, English Language and Literature, Chemistry, French.

5. The First and Second Year Exhibition Examinations will, for Candidates who have not previously entered the University, be regarded as Matriculation Examinations.

6. No student can hold more than one Exhibition or Scholarship at the same time; but four of the first Year Exhibitioners will be granted exemption from the Sessional fees throughout their College Course, under Presentation Scholarships from the Governor General. (See below.)

7. Exhibitions and Scholarships will not necessarily be awarded to the best answers at the Examinations. Absolute merit will be required.

8. If in any one College Year there be not a sufficient number of Candidates showing absolute merit, any one or more of the Exhibitions or Scholarships offered for competition may be transferred to more deserving Candidates in another year.

9. A successful Candidate must, in order to retain his Scholarship or Exhibition, proceed regularly with his College Course to the satisfaction of the Faculty.

10. The annual income of the Scholarships or Exhibitions will be paid in four instalments, viz :—In October, December, February and April, about the 20th day of each month.

11. The Examinations will be held at the beginning of every Session.

There are at present twelve Scholarships and Exhibitions.

THE JANE REDPATH EXHIBITION, founded by Mrs. Redpath, of Terrace Bank Montreal :—value, $100 yearly.

THE MCDONALD SCHOLARSHIPS AND EXHIBITIONS, ten in number, established by W. C. McDonald, Esq., Montreal :—value, $125 each, yearly.

THE CHARLES ALEXANDER SCHOLARSHIP, founded by Charles Alexander, Esq., Montreal, for the encouragement of the study of Classics and other subjects ; —value, $120 yearly.

EXHIBITIONS AND SCHOLARSHIPS TO BE OFFERED IN SEPTEMBER, 1881.

To Students entering the First Year:—Two Exhibitions of $125, *One of* $100.
Subjects of Examination :—

Greek.—Homer, Iliad, bk. IV. ; Xenophon, Anabasis, bk. V. ; Demosthenes, Philippic I.

Latin.—Cicero, In Catilinam, Oratt. III. and IV. ; Horace, Odes, bk. I. ; Ovid, Fasti, bk. I., vss. 1-300.

Latin Prose Composition.

A paper on Greek and Latin Grammar.

Text-Books.—Hadley's Elements of Greek Grammar. Arnold's Greek Prose Composition, Exercises 1 to 25. Dr. Wm. Smith's Smaller Latin Grammar, and Principia Latina, Part IV.

Mathematics.—Euclid, bks. I., II., III., IV. ; Algebra to end of Harmonical Progression (Colenso). Arithmetic.

English.—English Grammar and Composition.—(Bain's Grammar as far as Derivation.) Special exercises in Grammar and Composition.

The First Year Exhibitions will be awarded to the best answerers in the above course, provided there be absolute merit. But in distributing the Exhibitions of higher value among the successful candidates, answering in the following subjects will be taken into account also, in 1882 and subsequent years :

1. A re-translation into Latin of an English version of some passage from one of the easier Latin Prose writers (for specimens see Smith's Principia Latina, Part V.)

2. Euclid, Book VI. (omitting Props. 27, 28, 29), with Defs. of Book V.

3. English :—

An Examination upon one of Shakespeare's plays :—1882—Julius Cæsar.

To Students entering the Second Year :—Three Exhibitions of $125.

Subjects of Examination :—

Greek.—Homer, Odyssey, bk. XI. ; Xenophon, Hellenics, bk. II. ; Herodotus, bk. VI., Chaps. 71 to end of Book.

Latin.—Virgil, Æneid, bk. VI. ; Horace, Odes, bk. III. ; Livy, bk. IX., Chap. 23 to end ; Cicero, Select Letters (Pritchard and Bernard).

Greek and Latin Prose Composition.

A paper on Grammar and History.

Text-Books.—Dr. William Smith's History of Greece. Liddell's History of Rome. Hadley's Greek Grammar. Smith's Student's Latin Grammar. Arnold's Greek Prose Composition. Smith's Principia Latina, Parts IV. and V.

Mathematics.—The Mathematics (Ordinary and Honour) of First Year.

English Literature.—Bain's Grammar ; Special exercises in Grammar and Composition.

Chemistry.—The Metallic Elements as in Wilson's Elementary Chemistry.

French.—De Fivas, Grammaire de Grammaires, to paragraph No. 422. Lafontaine, les Fables, livres III and IV. Molière, le Bourgeois gentilhomme.

To Students entering the Third Year : Two Scholarships of $125 *and one of* $120 ; *tenable for Two Years.*

Two of these will be given on Examinations in Science as follows :—One in Mathematics and Logic, and one in Natural Science and Logic :—

1. *Mathematics.*—Differential Calculus (Williamson, Chaps. 1, 2, 3, 4, 9; Chap. 12, Arts. 168–193 inclusive; Chap. 17, Arts. 225–243 inclusive). Integral Calculus (Williamson, Chaps. 1, 2, 3, 4, 5; Chap. 7, Arts. 126–140 inclusive; Chap. 8, Arts. 150–156 inclusive; Chap. 9, Arts. 168–176 inclusive). Analytic Geometry (Salmon's Conic Sections, Chaps. 1–14 inclusive). Hind's Plane and Spherical Trigonometry. Salmon's Modern Higher Algebra (first six chapters). Todhunter's Theory of Equations.

Logic, as in Jevons' Elementary Lessons on Logic.

2. *Natural Science.*—*Botany*, as in Gray's Structural and Systematic Botany. *Canadian Botany*, including a practical acquaintance with all the orders of Phænogams and Acrogens. *Chemistry*, as in Wilson's Elements.

Logic, as in Jevons' Elementary Lessons on Logic.

One will be given on an Examination in Classics and Modern Languages, as follows:—

Classics.—*Greek.*—Euripides, Medea; Demosthenes, the Olynthiacs; Xenophon, Hellenics, Book I.; Herodotus, Book VIII.; Thucydides, Book VI. *Latin.*—Horace, Satires, Book I., and Epistles, Book I.; Virgil, Georgics, Book I.; Terence, Adelphi; Tacitus, Annals, Book I.; Pliny, Select Letters (Pritchard and Bernard; Clarendon Press Series). Greek and Latin Prose Composition.

History.—*Text-books.*—Rawlinson's Manual of Ancient History; Smith's Greece; Liddell's Rome.

English Language and Literature.—Spalding's English Literature; Shakespeare, Julius Cæsar; Trench, Study of Words; Trench, English, Past and Present.

English Composition.—(High marks will be given for this subject, in order to encourage the practice of it, after the models of the best writers.)

French.—Racine, Britannicus; Molière, les Femmes savantes. De Fivas' Grammaire des Grammaires. Les Ecrivains célèbres de la France:—Bonnefon. Translation from English into French.

Classical Subjects for Exhibitions, September, 1882.

GREEK.—*First Year.*

Homer, Iliad, bk. VI.; Xenophon, Anabasis, bk. I.; Demosthenes against Aphobus I. and II.

LATIN.—*First Year.*

Cicero, Pro Archiâ; Horace, Odes, bk. I.; Virgil, Æneid, bk. II.

GREEK.—*Second Year.*

Homer, Odyssey, bk. XII.; Xenophon, Hellenics, bk. II.; Herodotus, bk. VII. Chaps. 148 to end of book.

LATIN.—*Second Year.*

Virgil, Æneid, bk. VII.; Horace, Odes, bk. III.; Livy, bk. XXI. Chaps. 1-29; Cicero, Select Letters (Pritchard and Bernard).

English Subjects for Exhibitions &c, September, 1882.

First Year.—English Grammar and Composition. (Bain's Grammar as far as Derivation). Shakespeare, *Julius Cæsar.*

Second Year.—Bain's Grammar.—Shakespeare, *As You Like It.* Trench, *Study of Words.*

Third Year.—Spalding's English Literature, (cap. VI. to end of book). Shakespeare, *Tempest.* Milton, *Paradise Lost,* books I. and II. Trench, *Study of Words.*

EXEMPTIONS FROM FEES UNDER PRESENTATION SCHOLARSHIPS, &c.

A number of these are in the gift of Benefactors, and entitle the Students holding them to exemption from the Sessional Fees in the Faculty of Arts. Sixteen have been placed by the Governors at the disposal of His Excellency the Governor-General. Candidates must pass the usual Matriculation Examination.

[By command of His Excellency, four of these Exemptions will be offered for competition in the First Year Exhibition Examinations of the ensuing session.]

Eight Exemptions from fees may be granted by the Board of Governors, from time to time, to the most successful students who may present themselves as candidates. By order of the Board one of these is given annually to the *Dux* of the High School of Montreal, and one to the Dux of any other Academy or High School sending up, in one year, three or more candidates competent to pass creditably the Matriculation Examination.

In the event of any Academy or High School in the Province of Quebec offering for competition among pupils an Annual Bursary in the Faculty of Arts, of not less than $80, the Governors will add the amount of the fees of tuition thereto.

An Exemption from fees may be given annually to any teacher holding the Model School or Academy Diploma of the McGill Normal School, recommended by the Principal and Professors of the School, and passing creditably the Matriculation Examination in Arts.

§ IV. EXAMINATIONS.

COLLEGE EXAMINATIONS.

1. There are two Examinations in each year; one at Christmas and the other at the end of the Session. In each of these, the students who pass are arranged according to their answering, as 1st Class, 2nd Class, and 3rd Class.

In the Fourth Year only, the University Examination for B.A. takes the place of the Sessional Examination.

Fourth Year Students are required at the Christmas Examinations to pass in all the subjects of the obligatory lectures, even though some of the subjects do not form part of their B.A. Examination.

2. Students who fail in any subject in the Christmas Examinations are required to pass a Supplemental Examination in that subject before admission to the Sessional Examinations.

3. Students who fail in one subject in the Sessional Examinations are required to pass a Supplemental Examination in it. Should they fail in this, they will be required in the following Session to attend the Lectures and pass the Examination in the subject in which they have failed, in addition to those of the Ordinary Course, or to pass the Examination alone without attending Lectures, at the discretion of the Faculty.

4. Failure in two or more subjects at the Sessional Examinations involves the loss of the Session. The Faculty may permit the Student to recover his standing by passing a Supplemental Examination at the beginning of the ensuing Session. For the purpose of this Regulation, Classics and Mathematics are each regarded as two subjects.

5. The time for the Supplemental Examination will be fixed by the Faculty; and such Examination will not be granted at any other time, except by special permission of the Faculty, and on payment of a fee of $5.

UNIVERSITY EXAMINATIONS.

1. FOR THE DEGREE OF B.A.

There are three University Examinations:—The *Matriculation*, at entrance; the *Intermediate*, at the end of the Second Year; and the *Final*, at the end of the Fourth Year.

1. The subjects of the Matriculation Examination are stated in Section 11.

2. In the Intermediate Examination the subjects are Classics and Pure Mathematics, Logic, and the English Language, with one other Modern Language, or Botany. Theological Students are allowed to take Hebrew instead of a Modern Language. The subjects for the Examination of 1882 are as follows :—

Classics.—Greek.—Lysias.—Contra Eratosthenem.
Latin.—Tacitus.—Germania.
Latin Prose Composition.

Mathematics.—Arithmetic.
Euclid, Books I., II., III., IV., VI., and defs. of Book V.
Algebra, to Quadratic Equations, inclusive.
Trigonometry, including use of Logarithms.

Logic.—Jevons' Elementary Lessons in Logic, pp. 1–182.

English.—An English Essay. Spalding's History of English Literature. A paper on the essentials of British History (Collier).

With one of the following :—

1. *Botany and Vegetable Physiology.*—Structural and Systematic Botany, as in Gray's Text-Book, omitting the Descriptions of the Orders.
2. *French.*—Molière :—Le Malade imaginaire, l'Avare. Racine :—Britannicus. Les Ecrivains célèbres de la France :—Bonnefon. Translation into French.
3. *German.*—Schmidt's German Guide ; Adler's Reader ; Translation into German.
4. *Hebrew.*—Grammar to the end of the Irregular verbs. Translation from the Book of Genesis, first three chapters. Exercises :—Hebrew into English, and English into Hebrew.

3. For the Final Examination six subjects are offered for selection ; namely :—[1] Classics, [2] Mixed Mathematics, [3] Mental and Moral Philosophy, [4] Natural Science, [5] Experimental Physics, [6] One Modern Language and Literature (or Hebrew), with History. Every candidate must pass in four of these, namely :—Classics and Mixed Mathematics, which are obligatory, and any two of the remaining subjects, at his option. The subjects for 1882 are as follows :—

1. *Classics.*—Greek.—Herodotus.—Book IX.
Sophocles.—Electra.
Latin—Tacitus.—Histories, Book I.
Juvenal.--Satires VIII and IX.
Latin Prose Composition.
General Paper in Grammar and History.

2. *Mathematics.*—Mechanics. Hydrostatics. Optics. Astronomy. } As treated in Galbraith and Haughton's Manuals.

[Except in the case of Exemptions to Professional Students, as stated in § V.]

3. *Mental and Moral Philosophy.*—Murray's Outline of Hamilton's Philosophy; Calderwood's Handbook of Moral Philosophy.

4. *Natural Science.*—Geology and Mineralogy, as in Dana's Geology and Manual of Mineralogy.—The Zoology, Botany and Chemistry necessary to the study of the books above named; or as in Dawson's Handbook of Zoology; Gray's Structural and Systematic Botany, and Wilson's Inorganic Chemistry.

5. *Experimental Physics.—Light.*—Theories.—Reflection.—Refraction.—Dispersion.—Interference and Diffraction.—Double Refraction.—Polarization. *Heat.*—Dilatation of Solids, Liquids and Gases.—Specific and Latent Heat.—Radiation and Conduction.—Mechanical Theory of Heat.

6. *History and English.*—viz., (*a*) *English Language.*—Marsh's Hand-Book; or Chaucer, Prologue to Canterbury Tales, with Early English Grammar. (Clarendon Press Series, ed. Morris).

(*b*) *English Literature.*—Shakespeare—Hamlet. (Clarendon Press Series, ed. Clark and Wright.) Bacon's Essays, 1-32 inclusive.

(*c*) *History.*—Freeman:—General sketch of European History; Green's Short History of the English people: The (Tudor and Stuart Periods.)

Or instead of History and English, candidates may take one of the following:—

(a) *History and French.*—History as above. The Course of French for the Fourth Year.—Boileau, Art Poétique; Corneille, Horace; Translation into French, and French Composition.

(b) *History and German.*—History as above. Schiller, Geschichte des 30 jahrigen Krieges; Goethe, Iphigenie auf Tauris; General paper on Grammar: Translation into German, and German Prose Composition.

(c) *History and Hebrew.*—(Theological Students only.) History as above. Hebrew Grammar; Translation from frst four chapters of Isaiah; any three of the Psalms; the Chaldaic portions of the Scriptures; Targum of Onkelos on Genesis, Chap. I.; Modern Hebrew Poetry, Halevi or Gabirol.

II. FOR THE DEGREE OF M.A.

Candidates are required to prepare and submit to the Faculty of Arts, not less than two months before proceeding to the degree, a Thesis on some Literary or Scientific subject previously approved by the Faculty.

All candidates, except those who have taken First Class B. A. Honours, or have passed First Class in the Ordinary Examinations

for the Degree of B. A., are required also to pass an Examination, either in Literature or in Science as each Candidate may select. This examination is not compulsory before the Session 1883–4.

III. DEGREE OF LL.D.

Every Candidate for the Degree of LL.D. in Course is required to prepare and submit to the Faculty of Arts, not less than three months before proceeding to the degree, twenty-five printed copies of a Thesis on some Literary or Scientific subject previously approved by the Faculty, and possessing such a degree of Literary or Scientific merit, and evidencing such originality of thought or extent of research, as shall, in the opinion of the Faculty, justify it in recommending him for that degree.

Every Candidate for the Degree of LL.D., in Course, is required to submit to the Faculty of Arts, with his Thesis, a list of books, treating of some one branch of Literature or of Science, satisfactory to the Faculty, in which he is prepared to submit to examination, and on which he shall be examined, unless otherwise ordered by vote of the Faculty.

§ V. SPECIAL PROVISIONS FOR CANDIDATES FOR HONOURS AND FOR PROFESSIONAL STUDENTS.

I. Candidates for Honours in the Third Year.

Candidates for Honours who, at the Sessional Examination of the Second Year, have passed in the First Class in the subjects in which they purpose to compete for Honours, and not below Second Class in the others, may, on application to the Faculty, be allowed the following exemptions :—

They may in the Lectures and Examinations of the Third Year omit any one of the following subjects, provided it is not immediately connected with that in which they study for Honours :—(1) Greek. (2) Latin. (3) Optics. (4) Rhetoric. (5) Moral Philosophy. (6) Experimental Physics. (7) Zoology.

The particular exemption desired must be stated to the Faculty in the application of the candidate, and no change can be made subsequently.

For the purpose of the above Regulations, the subjects of the Second Year in which Honours are given in the Third Year are classified under the following heads :

1. Classics. 2. Mathematics and Physics. 3. Logic, Moral and Mental Philosophy. 4. Natural Science. 5. English.

The candidate must pursue the Honour course selected to the satisfaction of the Professor, and must pass the Examination therein.

The above exemptions shall be granted only with reference to Honour subjects in which regular courses of Lectures are delivered in the Third Year.

II. Candidates for B.A. Honours.

Students who have attained Honours at the end of the Third Year in any subject, and wish to be candidates for B.A. Honours in the same subject, are entitled to exemptions if they have been placed in the 1st or 2nd Class in any two of the four subjects required (§ IV) for the Final Examination. The Regulations concerning these exemptions are as follows :—

[1] EXAMINATIONS.—They may claim to have the Third Year Examination in the two subjects referred to regarded as a B.A. Examination in the same.

[This amounts to exemption at the ordinary B.A. Examination from two of the four subjects required above.]

[2] LECTURES.—They are required to attend the Ordinary Lectures of the Fourth Year [for which see § I and Time Table] in three subjects only. Two of these must be the subjects in which they are to pass the ordinary B.A. Examination, if Lectures are delivered in them ; if not, the choice is left to the Candidate.

[N.B. Candidates are required to pass the Christmas Examination in the subjects in which they attend the ordinary Lectures.]

III. Law and Medical Students.

1. Students of the Third and Fourth Years, matriculated in the Faculties of Law or Medicine of the University, are entitled to the following exemptions :—

In the Third Year they may omit the Lectures and examinations in Optics and in any one of the following subjects :—Zoology, Experimental Physics, or Rhetoric and English Literature.

In the Lectures of the Fourth year they may omit Greek and Astronomy and also Geology or Experimental Physics. At the Christmas Examination of the Fourth year they may omit Astronomy and Optics.

In the Ordinary B.A. Examinations they may, in Classics, pass in Latin alone ; and in Mixed Mathematics, in Mechanics and Hydrostatics alone.

To be allowed these privileges in either year, they must give notice at the commencement of the Session, to the Dean of the Faculty, of their intention to claim exemptions as Professional Students, and must produce at the end of the Session certificates of attendance on a full

course of Professional Lectures during the year for which the exemptions are claimed.

IV. Students in the Faculty of Applied Science.

Students in Arts who have passed the Intermediate Examination and been placed therein not lower than the Second Class in Mathematics have the privilege of entering the Second Year in Applied Science, and will be exempted from the Mental and Moral Philosophy and the Greek of the Third and Fourth Years in Arts while proceeding regularly in the course for B. Ap. Sc.

V. Students of Affiliated Theological Colleges.

1. Such Students, whether entered as Matriculated or Occasional, are subject to the regulations of the Faculty of Arts in the same manner as other students.

2. The Faculty will make formal reports to the Governing body of the Theological College to which any such Students may belong, as to :—[1] their conduct and attendance on the classes of the Faculty; and [2] their standing in the several examinations; such reports to be furnished after the Christmas and Sessional Examinations severally, if called for.

3. Matriculated Students are allowed no exemptions in the course for the degree of B.A. till they have passed the Intermediate Examination; but they may take Hebrew in the First and Second years, instead of French or German.

4. In the Third and Fourth years they are allowed exemptions as follows :—

In the Third year they may omit Optics and Rhetoric and English Literature with Experimental Physics or Zoology.

In the Fourth year they may omit Astronomy and Optics and English Literature, with Experimental Physics or Geology.

5. Certificates of attendance on the full course of lectures in the Theological College, during the year for which the exemptions are claimed, must be produced by Students who avail themselves of these exemptions, before presenting themselves for Examination.

[No Student will be allowed in the same Session both Professional and Honour exemptions. Students are cautioned against difficulties that may arise from any change such as taking Professional Exemptions in the Third Year, and Honour Exemptions in the Fourth, or vice versâ, *e. g.*, a Professional Student who has not taken up "Optics" in the Third Year, may be required by the Regulations to take it up in the Fourth if he does not claim Professional Exemptions in that year].

§ VI. MEDALS, HONOURS, PRIZES AND CLASSING.

1. GOLD MEDALS will be awarded in the B.A. Honour Examinations to Students who take the highest Honours of the first Rank in the subjects stated below, and who shall have passed creditably the Ordinary Examinations for the Degree of B.A.:

The *Henry Chapman Gold Medal*, for the Classical Languages and Literature.
The *Prince of Wales Gold Medal*, for Logic and Mental and Moral Philosophy.
The *Anne Molson Gold Medal*, for Mathematics and Natural Philosophy.
The *Shakespeare Gold Medal*, for the English Language, Literature and History.
The *Logan Gold Medal*, for Geology and other Natural Sciences.

In the event of there being no Candidate for any Medal, or of none of the Candidates fulfilling the required conditions, the Medal will be withheld, and the proceeds of its endowment for the year may be devoted to prizes in the subjects for which the Medal was intended. For details, see announcements of the several subjects below.

2. HONOURS, of First or Second Rank, will be awarded to those Matriculated Students who have successfully passed the Examinations in any Honour Course established by the Faculty, and have also passed creditably the ordinary Examinations in all the subjects proper to their year.

By a recent Order of the Lieutenant-Governor of Ontario in Council, Honours in this University confer the same privileges in Ontario as Honours in the Universities of that Province, as regards certificates of eligibility for the duties of Public School Inspectors, and as regards exemption from the non-professional Examination of Teachers for First-Class Certificates for Grades "A and B."

3. SPECIAL CERTIFICATES will be given to those candidates for B.A. who shall have been placed in the First Class at the ordinary B.A. Examination, in which case exemptions (under § V.) can not be taken.

4. CERTIFICATES of High General Standing will be granted to those Matriculated Students, who are placed in the First Class in the aggregate of the Studies proper to their year.

5. PRIZES OR CERTIFICATES to those Matriculated Students who may have distinguished themselves in the studies of a particular class, and have attended all the other classes proper to their year.

6. His Excellency the Marquis of Lorne has been pleased to offer a Gold Medal in the Faculty of Arts, yearly during his term of office, for the encouragement of the study of Modern Languages and Literature with History.

LORNE GOLD MEDAL.—The Regulations are as follows :

1. The Subjects for competition shall be French and either German or Spanish, together with the History part of the present Honour Course for the Shakespeare Medal.

2. The course of study shall extend over two years, viz., the Third and Fourth Years.

3. The successful Candidate must be capable of speaking and writing both languages correctly.

4. There shall be examinations in the subjects of the course in both the Third and Fourth Years, at which Honours may be awarded to deserving Candidates.

5. The general conditions of competition, and the privileges as regards exemptions, shall be the same as for the other Gold Medals in the Faculty of Arts.

6. Students from other Faculties shall be allowed to compete, provided they pass the examinations of the Third and Fourth Years in the above subjects.

7. Candidates desiring to enter on the Third Year of the Course, who have not obtained First Class standing at the Intermediate or Sessional Examinations of the Second Year in Arts, are required to pass an examination in the work of the first two years of the course in Modern Languages, if called on to do so by the Professors.

8. The subjects of Examination shall be as follows :

I. FRENCH.—*Third Year.*

Racine,—Phèdre ; Les Plaideurs.
Boileau,—L'Art Poétique.
Pascal,—Les Pensées.
La Bruyère,—Les Caractères.
Ampère,—Formation de la Langue française.
In addition to the ordinary course as stated in the Calendar.

Fourth Year.

A. Cogery,—Third French Course.
Molière,—Le Misanthrope.
Corneille,—Cinna.
La Rochefoucauld,—Les Maximes.
Montaigne,—Les Essais.
Auguste Brachet,—Grammaire historique.
Etudes des Anciens textes français, (Demogeot.
In addition to the ordinary Course as stated in the Calendar.

II. GERMAN.—*Third Year.*

Advanced Grammar,—(Whitney).
Schiller,—Wilhelm Tell.
Chamisso,—Peter Schlemihl.
Wieland,—Oberon.

Schleicher,—Die Deutsche Sprache (History of the German Language).
History of German Literature from 1750, being a Critical Review of the Principal Writers of the Classical Period;—The Men of 'Sturm und Drang'—The Romantic Schools—Modern Lyric Poets—(Gostwick and Harrison's Outlines.)
Translation into German (Selections from English Prose writers).
Composition.

Fourth Year.

Advanced Grammar,—(Whitney).
A special study of Goethe's 'Faust' (Part I.)and 'Iphigenie auf Tauris.'
Selections from Heine's Lyrical Poems.
Schiller,—Geschichte des dreissigjährigen Krieges.
Schleicher,—Die Deutsche Sprache.
German Literature from 1150 to 1350.—Mediæval Classic writers—Epic, Lyric and Didactic Poetry—(Kurz, Leitfaden zur Geschichte der Deutschen Literatur).
Translation from English writers.
Composition.

III. SPANISH.—*Third Year.*

Grammar and Composition, Rabadan's Advanced Course.
Selection from the Novelas Exemplares of Cervantes.
Poesias Selectas de Lope de Vega.
History of Spanish Language and Literature, Ticknor and Bouterwek. First period; from end of the twelfth century to the beginning of the sixteenth.

Fourth Year.

Composition.
Translation from English into Spanish.
Latter portion of Rabadan's Advanced Course.
Calderon's La Vida es sueno, and Il Alcalde de Zalamea.
History of Spanish Literature, Luis de Leon, Cervantes, Lyric Poetry, Ballad Poetry, Romancero del Cid, School of Salamanca.

IV. HISTORY.—(*See Honour Course for Shakespeare Medal.*)

The Competitive Examination of the Fourth year will include the work of both the Third and Fourth Years.

7. THE NEIL STEWART PRIZE of $20 is open to all Undergraduates of this, and also to Graduates of this or any other University, studying Theology in any College affiliated to this University, under the following rules:

1. The prize will not be given for less than a thorough examination in Hebrew Grammar passed in the First Class, in reading and translating the Pentateuch and such poetic portions of the Scripture as may be determined.

2. In case competitors should fail to attain the above standard, the prize will be withheld, and a prize of Forty Dollars will be offered in the following year for the same.

[Course for the present year :—Hebrew Grammar (Gesenius) ; Translation and analysis of the first ten chapters of Genesis ; the prophet Habakkuk (the whole book ; and the first five Psalms.]

3. There will be two Examinations of three hours each ; one in Grammar and the other in Translation and Analysis.

This Prize, founded by the late Rev. C. C. Stewart, M.A., and terminated by his death, has been re-established by the liberality of Neil Stewart, Esq., of Vankleek Hill, and will be offered for competition next Session.

8. (*a*). EARLY ENGLISH TEXT SOCIETY'S PRIZE.—This Prize, the annual gift of the Early English Text Society, will be awarded for proficiency in (1) Anglo-Saxon, (2) Early English before Chaucer.

The subjects of Examination will be :

(1) *The lectures of the Third and Fourth Years on Anglo-Saxon.*

(2) *Specimens of Early English (Clarendon Press Series, ed. Morris and Skeat), Part II. A.D.* 1298—*A.D.* 1393. *The Lay of Havelok the Dane (Early English Text Society, ed. Skeat).*

(*b*). NEW SHAKESPEARE SOCIETY'S PRIZE. This Prize, the annual gift of the New Shakespeare Society, will be awarded for a critical knowledge of the following plays of Shakespeare :

Hamlet ; Macbeth ; Othello ; King Lear.

9. The names of those who have taken Honours, Certificates, or Prizes, will be published in order of merit ; with mention, in the case of Students of the First and Second Years, of the Schools in which their preliminary education has been received.

---

§ VII. LICENSED BOARDING-HOUSES.

(*Regulations for Students in Arts, passed by Corporation April*, 1875.)

1. All Students under 21 years of age, not residing with parents or guardians, nor belonging to a Theological College, shall reside in licensed boarding houses, unless they produce written authority from parents or guardians to reside elsewhere.

2. Persons applying for a license to keep a boarding-house shall

produce evidence satisfactory to the Principal as to their character and fitness, and the suitability of the house for the health and comfort of the students. They shall also supply him with a statement of charges.

3. The keeper of the boarding-house shall report immediately to the Principal the entrance or departure of any Student, and any instance of immorality or disorderly conduct.

§ VIII. ATTENDANCE AND CONDUCT.

All Students shall be subject to the following regulations for attendance and conduct:

1. A Class-book shall be kept by each Professor and Lecturer, in which the presence or absence of Students shall be carefully noted; and the said Class-book shall be submitted to the Faculty at all their ordinary meetings during the Session.

2. Each Professor shall call the roll immediately at the beginning of a lecture. Credit for attendance on any lecture may be refused on the grounds of lateness, inattention or neglect of study, or disorderly conduct in the Class-room. In the case last mentioned, the student may, at the discretion of the Professor, be required to leave the Class-room. Persistence in any of the above offences against discipline after admonition by the Professor, shall be reported to the Dean of Faculty. The Dean may, at his discretion, reprimand the Student, or refer the matter to the Faculty at its next meeting, and may in the interval suspend from Classes.

3. Absence from any number of lectures can only be excused by necessity or duty, of which proof must be given, when called for, to the Faculty. The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session, shall in each case be determined by the Faculty.

4. While in the College, or going to or from it, Students are expected to conduct themselves in the same orderly manner as in the Class-rooms. Any Professor observing improper conduct in the College buildings or grounds, may admonish the Student, and if necessary report him to the Dean.

5. Every Student is required to attend regularly the religious services of the denomination to which he belongs, and to maintain without as well as within the walls of the College a good moral character.

6. When Students are brought before the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, impose fines, disqualify from competing for prizes and honours, suspend from Classes, or report to the Corporation for expulsion.

7. Any Student who does not report his residence, on or before Nov. 1st in each year, is liable to a fine of one dollar.

[NOTE.—All Students are required to appear in Academic dress while in or about the College buildings.]

8. Any Student injuring the furniture or buildings will be required to repair the same at his own expense, and will, in addition, be subject to such other penalty as the Faculty may see fit to inflict.

9. All cases of discipline involving the interest of more than one Faculty, or of the University in general, shall be immediately reported to the Principal, or, in his absence, to the Vice-Principal.

---

§ IX. LIBRARY AND MUSEUM.

1. The books in the Library consist of two divisions :—1st, those which may be lent ; and, 2nd, those designated by the general term "Books of Reference," which may not, under any circumstances, be removed from the Library.

2. A Student may borrow books from the Library on depositing the sum of four dollars with the Librarian, and signing a receipt for the books ; such deposit to be returned to the Student on his returning the books uninjured.

3. Students may borrow not more than three volumes at one time, except on special recommendation of a Professor, and must return them within two weeks, on penalty of a fine of 20 cts. for the first week of detention, and 50 cts. for each subsequent week.

4. A Student incurring a fine will be debarred the use of the Library until the fine has been paid.

5. Any volume or volumes lost or damaged by a Student shall be paid for by him at such rates as the Faculty may direct, having reference to the value of the book and of the set to which it may belong.

6. Students may read in the Library at such hours as may be determined by the Faculty.

7. Professors and Lecturers may borrow any books required by them for their duties in the College, not exceeding ten volumes at any one time. Books so borrowed must be returned at or before the end of each Session.

8. Graduates in any of the Faculties, on making a deposit of four dollars, are entitled to the use of the Library, subject to the same rules and conditions as Students, but they are not required to pay the Annual Library Fee.

9. Members of the McGill College Book Club are, by a regulation of Corporation, entitled to the use of the Library on the same conditions as Graduates.

10. Persons not connected with the College may consult books in the Library, on obtaining an order from any of the Governors, or from the Principal, the Dean of the Faculty, or any of the Professors ; and donors of books or money to the amount of Fifty Dollars may at any time consult books on application to the Librarian.

[NOTE.—This rule applies also to Students in Law and Medicine who have paid the Library Fee to the Secretary. They are required to present their Matriculation Tickets to the Secretary and to the Librarian.]

11. The Library will be open from 10 a.m. to 4 p.m., daily, except Saturdays. On Saturdays it will be opened from 10 a.m. to 1 p.m.

12. No one is allowed to enter the alcoves, or to take down books from the shelves, except the Governors, Members of Corporation, Professors, the Librarian and his assistants, or those whom any of the above may accompany personally.

13. A person desiring to read or to borrow a book, which he has ascertained from the Catalogue to be in the Library, will fill up one of the blank forms provided for Readers and Borrowers respectively, and hand it to the Librarian, who will thereupon procure him the book.

14. Readers must return the books they have obtained to the Librarian, before leaving the Library.

15. No conversation that can disturb Readers is permitted in the Library.

16. The time and conditions of study in the Museum will be arranged by the Professor of Natural History.

§ X. FEES.

Matriculation Fee for the First Year (to be paid in the Year of Entrance only)..... $4 00

For the Second Year (exigible from Students who enter in the Second Year, and also from those who have failed in the First Year and re-enter in the Second Year on Examination)..... 6 00

Sessional Fee..... 20 00

Library Fee..... 4 00

Gymnasium Fee..... 2 50

Undergraduates and Students in Special Courses are required to pay all the above Fees.

Partial Students, viz., those taking three or more Courses of Lectures, are required to pay the Matriculation, Library and Gymnasium Fees, and $5 for each Class which they attend, or $20 for all the courses.

Occasional Students taking one course of Lectures only, are required to pay $5 per Session for that course.

Occasional Students taking two courses of Lectures are required to pay the Library Fee and $5 for each course.

The Matriculation, Library, and Gymnasium Fees are exigible from Students holding exemptions from Sessional Fees.

Graduates in Arts are allowed to attend, without payment of fees, all lectures except those noted as requiring a special fee.

The fees must be paid to the Secretary and the tickets shown to the Vice-Dean within a fortnight after the commencement of attendance in each session. In case of default, the Student's name will be removed from the College books, and can

be replaced thereon only by permission of the Faculty and on payment of a fine of $2.

[All fines (see also 7, § VIII.) are applied to the purchase of books for the Library.]

Fee for the Degree of B.A...... $5 00
" " " *M.A*.....$10 00
" " " *LL.D*.....$50 00

If the Degree of M.A. be granted, with permission to the Candidate, on special grounds, to be absent from Convocation, the fee is.....$25.00

The B.A. fee must be paid before the Examination.

The M.A. fee must be sent to the Secretary of the University at the same time that the Candidate sends his Thesis to the Dean of the Faculty. This is a condition essential to the reception of his application.

A Bachelor of Arts or Master of Arts, intending to proceed to a higher Degree, is required, in addition to the above, to keep his name on the books of the University, by the Annual payment of a fee of $2 to the Registrar of the University (which payment suffices also for Registration under Chap. III. of the Statutes of the University). He may, if he prefer it, compound for the above Annual fees, by the payment of $6 in one sum for the Master's Degree, or $30 for the Doctor's Degree, on or before the date of application for the Degree.

§ XI. COURSES OF LECTURES.

I. ORDINARY COURSE.

1. CLASSICAL LITERATURE AND HISTORY.

Professor, Rev. G. CORNISH, M.A., LL.D.

GREEK.

First Year.—HOMER.—ODYSSEY, Book XII.
XENOPHON.—HELLENICS, Book II.
Greek Prose Composition.

Second Year.—LYSIAS.—IN ERATOSTHENEM.
EURIPIDES.—MEDEA.

Third Year.—DEMOSTHENES.—THE OLYNTHIACS.
AESCHYLUS.—THE PROMETHEUS VINCTUS.

Fourth Year.—HERODOTUS.—Book IX.

LATIN.

First Year.—VIRGIL.—ÆNEID, Book VII.
CICERO.—EPISTOLAE SELECTAE.
Latin Prose Composition.

Second Year.—HORACE.—EPISTLES, Book I.
TACITUS.—GERMANIA.
Latin Prose Composition.
Third Year.—JUVENAL.—SATIRES VIII. and X.
PLAUTUS.—MILES GLORIOSUS.
Latin Prose Composition.
Fourth Year.—TACITUS.—HISTORIES, Book I.
Latin Prose Composition.

In the work of the Class the attention of the Student is directed to the collateral subjects of History, Antiquities and Geography; also to the grammatical structure and affinities of the Greek and Latin Languages; and to Prosody and Accentuation.

---

2. ENGLISH LANGUAGE AND LITERATURE.

(MOLSON PROFESSORSHIP.)

Professor, VEN. ARCHDEACON LEACH, D.C.L., LL.D.

Associate-Professor, CHAS. E. MOYSE, B.A.

First Year.—English Language and Literature.—Text-books—Bain's English Grammar, as far as Derivation. During the course of lectures on Literature Students will be advised as to individual reading.
Second Year.—A detailed course on some period of English Literature. Session 1881-2—The Great Poets of the Nineteenth Century.
Third Year.—Rhetoric.—Text-Book—Whately's Rhetoric, I., II., III.
Fourth Year.—A course on the following special subjects:
Chaucer, The Prologue to the Canterbury Tales; Shakespeare, Hamlet.

3. HISTORY.

Professor, CHAS. E. MOYSE, B.A.

During the Session of 1881-2 the Professor of History will deliver a course of lectures on the Constitutional History of England during the Plantagenet period.

---

4. LOGIC, MENTAL AND MORAL PHILOSOPHY.

(JOHN FROTHINGHAM PROFESSORSHIP OF MENTAL AND MORAL PHILOSOPHY.)
Professor, REV. J. CLARK MURRAY, LL.D.

Second Year.—ELEMENTARY PSYCHOLOGY.—Text-Book—Bain's Mental Science.
LOGIC—Text-Book—Jevons' Elementary Lessons in Logic.

Third Year.—MORAL PHILOSOPHY.—Text-Book—Calderwood's Handbook of Moral Philosophy.

Fourth Year.—MENTAL PHILOSOPHY.—Text-Book—Murray's Outline of Hamilton's Philosophy.

---

5. FRENCH LANGUAGE AND LITERATURE.

Professor, P. J. DAREY, M.A., B.C.L.

First Year.—DE FIVAS, Grammaire des Grammaires.
LA FONTAINE, les Fables, livres III et IV.
MOLIERE, le Malade imaginaires.
Dictation. Colloquial exercises.

Second Year.—DE FIVAS, Grammaire des Grammaires.
MOLIERE, l'Avare.—RACINE, Britannicus.
Translation into French :—DR. JOHNSON, Rasselas.
Les Ecrivains célèbres de la France :—Bonnefon.
Dictation. Parsing. Colloquial exercises.

Third Year.—POITEVIN, Grammaire élémentaire.
PONSARD, l'Honneur et l'Argent.
CORNEILLE, le Cid.
Translation into French :—GOLDSMITH, The Vicar of Wakefield.
French Composition. Dictation.
Les Ecrivains modernes de la France :—Bonnefon.

Fourth Year.—BARRIERE et CAPENDUS, les Faux bons hommes.
EMILE SOUVESTRE, Un Philosophe sous les toits.
Lectures on French Literature.
Translation into French :—Shakespeare, "As you like it,"
French Composition. Dictation.

The Lectures in the Third and Fourth Years are given in French.

---

6. GERMAN LANGUAGE AND LITERATURE.

Professor, C. F. A. MARKGRAF, M.A.

First Year.—This Course comprises Grammar, Reading and Translations oral and written. Text-Books :—Schmidt's German Guide (1st and part of 2nd Course; Adler's Progressive German Reader (Selections from Sections 1, 2 and 3).

Second and Third Years.—Text-Books :—Schmidt's German Guide (2nd and 3rd Course); Otto's Conversation Grammar (excerpts; Adler's Reader (Selec-

tions from Sections 4 and 5).—German Plays (the authors to be made known at the commencement of the Session) ; History of German Literature from the earliest periods to the close of the 18th century (A Brief Survey, by C.F.A.M.)—Exercises in Parsing ; Translations from English writers ; German Composition (in the Third Year).

---

7. HEBREW AND ORIENTAL LITERATURE.

Professor, Rev. A. De Sola, LL.D.

Elementary Course.—(*For Students of the First and Second Years.*)—Grammar ; —Text-Book, Gesenius' Hebrew Grammar, with exercises in orthography and etymology ; Reading ; Translation and Grammatical Analysis of Historical portions of the Scriptures—Syntax—Mishlé Shualim—Fables, &c.

Advanced Course.—(*For Students of the Second, Third and Fourth Years.*)—Introduction to the Study of Hebrew Poetry—its spirit and characteristics. Lowth and Sarchi as Text-books. Translation from the Psalms, Lamentations and Isaiah. Ancient compared with Modern Hebrew Poetry ; the productions of Halevi, Gabirol, &c., Grammar, Exercises, &c., continued.

The Chaldee Language :—Grammar, *Mebo Halashon Aramith* of J. Jeitteles. The Chaldee portions of Scripture. Targum of Onkelos and T. Yerushalmi.

The Syriac Language :—Grammar (Uhlemann's) and Translation.

The course comprises Lectures on the above Languages and their Literature in particular, with a general notice of the other Oriental Languages, their genius and peculiarities. Comparative Philology, affinity of roots, &c., also receive due attention, while the portions selected for translation will be illustrated and explained by reference to Oriental manners, customs, history, &c.

---

8. SPANISH LANGUAGE AND LITERATURE.

Rev. Professor De Sola.

(Extra Fee for this Class, $5.00.)

The study of the Spanish Language on this continent, being generally pursued with special reference to commercial purposes, it will be sought to impart in this course a practical knowledge of the Castilian—the richest and most harmonious of the Peninsular languages—as well as an acquaintance with its Literature.

Ollendorf's Spanish Grammar by Velazquez and Simmoné, and the Reader of Velazquez, are the Text-Books employed in the Junior Class, who will also be exercised in Composition by both written and oral exercises. In the Senior

Class, Fernandes' Exercises, continuation of Grammar and Composition, Cervantes' Don Quixote, Quintana, Vida del Cid, and Mariana's Historia will be the subjects of study. Besides a special comparison with the Portuguese Language, a general notice, literary and historical, of the Bascuence and other dialects will be given.

---

9. MATHEMATICS AND NATURAL PHILOSOPHY.

(PETER REDPATH PROFESSORSHIP OF NATURAL PHILOSOPHY.)

Professor, ALEXANDER JOHNSON, M.A., LL.D.

(In the work of the First and Second Years, assistance will be given by G. H. Chandler, M.A., Lecturer in Mathematics in the Faculty of Applied Science.)

MATHEMATICS.—*(First Year)*—Arithmetic.—Euclid, Books 1, 2, 3, 4, 6, with Definitions of Book 5 (omitting propositions 27, 28, 29, of Book 6), Todhunter's Edition.—Todhunter's Algebra for Beginners, to end of Quadratic Equations with one unknown quantity, together with Involution, Indices, and Surds. —Galbraith and Haughton's Plane Trigonometry to beginning of solution of Plane Triangles.

MATHEMATICS.—*(Second Year)*—Arithmetic, Euclid, Algebra, and Trigonometry as before.—Nature and use of Logarithms.—Remainder of Galbraith and Haughton's Plane Trigonometry.—Elements of Solid Geometry, including the mensuration of Surfaces and Solids. Geometrical Conic Sections :—the Parabola with the fundamental properties of the Ellipse and Hyperbola. Text-book :—Wilson's Solid Geometry and Conic Sections, pp. 1-60 and 93-118.

The course for the Intermediate University Examination consists of the Mathematics for the first two years except Conic Sections and Solid Geometry.

MATHEMATICAL PHYSICS.—*(Third Year)*—Galbraith and Haughton's Mechanics (omitting chap. 5 of Statics), Hydrostatics, Optics.

ASTRONOMY.—*(Fourth Year)*—Galbraith and Haughton's Astronomy—The lectures on this subject will be given before Christmas.

EXPERIMENTAL PHYSICS.—*(Third and Fourth Years).*—1.—*Light.*—Theories.—Reflection.—Refraction.—Dispersion.—Interference and Diffraction.—Double Refraction.—Polarisation. 2.—*Heat.*—Dilatation of Solids, Liquids and Gases.—Specific and Latent Heat.—Radiation and Conduction.—Mechanical Theory of Heat. 3.—*Electricity.*—Statical and Dynamical :—including Electro-Magnetism—Magneto-Electricity—Thermo-Electricity—Diamagnetism— Electric Measurements—Practical Application to Telegraph, &c. 4.—*Magnetism.* 5.—*Sound.*—Theory of Undulations.—Production and Propagation of Sound—Vibrations of Strings, Rods, and Plates.—Vibrations of Fluids.—Musical Sounds. Text-Books :—Ganot's Treatise translated by Atkinson, and Tyndall on Heat and Sound. This Course extends over two years.

The Subjects for the Session 1881–82 are Light and Heat.

The Lectures in Mathematical and Experimental Physics will be illustrated by Apparatus, of which the College has a very good collection.

---

10. GEOLOGY AND NATURAL HISTORY.

(Logan Professorship of Geology.)

Professor, J. W. Dawson, LL.D., F.R.S., F.G.S.

B. J. Harrington, B.A., Ph. D., Assistant Professor of Geology.

I. Biological Course.

Botany.—(*Second Year*).—Vegetable Histology and Organography. Nutrition and Reproduction of Plants. Classification. Descriptive Botany. Flora of Canada. Notices of Palæobotany and Geographical Botany.

Text-Book.—Gray or Bessey.

[A prize of $20 will be given by the Professor for the best collection of plants and the greatest proficiency in their determination. The prize collections or duplicates of them to remain in the College Museum. Candidates must be students in Botany of the previous session.]

Zoology and Palæontology. (*Third Year.*)—Elements of Animal Physiology. Classification of Animals. Characters of the Classes and Orders of Animals, with Recent and Fossil Examples, taken as far as possible from Canadian Species.

Text-Book.—Dawson's Hand-book of Zoology, with books of reference.

II. Geological Course.

Mineralogy and Geology. *Fourth Year.*

(1) *Mineralogy.*—Chemical and Physical characters of Minerals, including Crystallography, the methods of determining species, and Descriptive Mineralogy; with special reference to those species most important in Geology, or useful in the Arts.

(2) *Lithology and Stratigraphy.*—Composition of Rocks and their structure on the small scale; Classification of Rocks. Arrangement of Rocks on the large scale; Stratification, Elevation and Disturbances, Denudation.

(3) *Chronologial Geology and Palæontology.*—Data for determining the relative ages of Formations. Classification according to age. Fauna and Flora of the successive periods. Geology of British America.

Text-books.—Dana's Manuals of Mineralogy and Geology, Dawson's Lecture Notes on Geology.

The Lectures in Natural History will be accompanied with Demonstrations in the Museum. Students in Natural History are also entitled to tickets of admission to the Museum of the Natural History Society of Montreal.

11. CHEMISTRY.

Lecturer, B. J. HARRINGTON, B.A., Ph. D.

First Year.—A Course of Lectures preparatory to the Course in Natural Science. The Lectures are illustrated by experiments, and treat of the Elementary Constitution of Matter, the laws of Chemical Combination by weight and volume, the Atomic Theory, Chemical Formulæ and Equations, Chemical Affinity, characteristics of Acids, Bases and Salts, Compound Radicals, the preparation and properties of the non-metallic and metallic Elements and many of their compounds, &c. A few Lectures are also devoted to the consideration of some of the more important Organic Substances, including Starch, Sugar, Albumen, Alcohol, the Vegetable Acids, &c. During the Course attention is called, as far as possible, to the relations of Chemistry to the various manufacturing industries. The laboratory is supplied with the usual apparatus, including a balance by Becker & Sons, spectroscope by Duboscq, Oxy-hydrogen lamp and blowpipe, large gas-holders &c.

Text-book.—Wilson's Inorganic Chemistry. In connection with the Lectures on Organic substances students may consult Roscoe's Elementary Chemistry or Fowne's Chemistry.

---

12. METEOROLOGY.

Superintendent of Observatory, C. H. MCLEOD, Ma.E.

Instruction in Meteorological Observations will be given in the Observatory, at hours to suit the convenience of the senior students.

Certificates will be granted to those students who pass a satisfactory examination on the construction and use of Meteorological Instruments and on the general facts of Meteorology.

---

13. ELOCUTION.

MR. JOHN ANDREW, Instructor.

Students are recommended by the Faculty to avail themselves of the Instructions of Mr. Andrew, who will make arrangements for evening classes to meet during the Session.

II. HONOUR COURSES.

I. CLASSICS.

B.A. HONOURS, BEING THE HONOUR COURSE FOR STUDENTS OF THE THIRD AND FOURTH YEARS.

Candidates for B.A. Honours in Classics will be examined in the following subjects :—

I. GREEK.

Plato.—Republic, Books I. and II.
Aristotle.—The Poetics.
Herodotus.—Books VIII. and IX.
Thucydides.—Books VI. and VII.
Xenophon.—Hellenics, Books I. and II.
Homer.—Odyssey, Books I., II. and III.
Hesiod.—Works and Days.
Æschylus.—Prometheus Vinctus.
" Seven against Thebes.
Sophocles.—Antigone.
Euripides.—Hippolytus.
Aristophanes.—The Frogs.
Pindar.—Olympic Odes.
Theocritus.—Idylls I. to VI.
Demosthenes.—De Corona.
Æschines.—Contra Ctesiphontem.

II. LATIN.

Livy.—Books XXI., XXII. and XXIII.
Tacitus.—Annals, Books I. and II.
" Histories, Book I.
Virgil.—Æneid, Books I. to IV.
Plautus.—Aulularia.
Terence.—Adelphi.
Horace.—Satires, Book I.
Juvenal.—Satt. VIII. and X.
Persius.—Satt. V. and VI.
Cicero.—De Imperio Cn. Pompeii.
" De Officiis.

III. HISTORY OF GREECE AND ROME

Text-books :—

1. Grote's History of Greece.
2. Arnold's History of Rome.
3 Mommsen's History of Rome.
4. Mahaffy's History of Greek Litereture.
5. Cruttwell's History of Roman Literature.
6. Cruttwell and Banton's Specimens of Roman Literature.
7. Donaldson's Theatre of the Greeks.

IV. COMPOSITION.

1. Composition in Greek and Latin Prose.
2. General paper on Grammar, History and Antiquities.

The Examination for B.A. Honours will extend over four days, in the morning from 9 to 12, and the afternoon from 2 to 5.

2. LOGIC, MORAL PHILOSOPHY, AND MENTAL PHILOSOPHY.

The Honour Course in this department extends over the Third and Fourth Years. The Lectures of the Third Year review the Ancient Greek Philosophy, while those of the Fourth Year discuss the chief modern systems in connection with the existing tendencies of speculation.

In the Third Year, the Examination will be on the following works, in addition to the Lectures of that year :—

Schwegler's History of Philosophy, Chapters 1-21, inclusive.

Thomson's Outline of the Laws of Thought, Parts I., II., and III.

For B.A. Honours, the following works will form the subjects of Examinations, besides the Lectures of the Third and Fourth Years :—

Schwegler's History of Philosophy.

Thomson's Outline of the Laws of Thought, Parts I., II., and III.

Mill's Logic.

Kant's Critique of the Pure Reason.

Kant's Theory of Ethics (translated by T. K. Abbott).

Plato's Republic.

---

3. ENGLISH LANGUAGE, LITERATURE AND HISTORY.

The examination for Honours in the Third Year will be on the works in the following course :

Language.—Anglo-Saxon.—The lectures of the Third Year.

Early English.—Specimens of Early English (Clarendon Press Series, ed. Morris and Skeat), Part II., extt. I-IX., inclusive.

Literature.—Chaucer.—The Prologue to the Canterbury Tales, The Knightes Tale, The Nonne Prestes Tale (Clarendon Press Series, ed. Morris).
Spenser.—The Faerie Queene, Book I.
Milton.—Shorter English Poems; Areopagitica (ed. Arber).
Dryden.—Annus Mirabilis; Hind and Panther; Absalom and Achitophel. The Preface to the "Fables."
Wordsworth.—Prelude (Moxon's edition).

History.—The lectures on Constitutional History.
Hallam.—Middle Ages, caps. 1, 3, 5, 8, 9.
Macaulay.—Vol. I. cap. 1.

Lectures on the Honour Subjects of the Third Year.

Language.—Anglo-Saxon.—The essentials of the Anglo-Saxon Language and Literature. Text-book—Sweet's Anglo-Saxon Reader (Clarendon Press Series).

Literature.—A course on some of the special Honour subjects.

History.—Honour students are required to attend the Ordinary course of lecture on History.

B.A. HONOUR COURSE.

For B.A. Honours, the examination will be on a selected portion of the Literature of the Third Year Honour course and on the following subjects:

Language.—Anglo-Saxon—The lectures of the Fourth Year.
Early English—Specimens of Early English (Clarendon Press Series, ed. Morris and Skeat), Part II., extt. X-XX., inclusive.

Literature.—Shakespeare—Love's Labour's Lost, A Midsummer's Night's Dream, Hamlet, The Tempest.
Ben Jonson—Every Man out of his Humour.
Pope—Essay on Criticism, Essay on Man, Moral Essays.
Cowper—The Task.
Campbell—The Preasures of Hope.
Shelley—Cenci, Adonais.
Tennyson—Idylls of the King, In Memoriam.
Matthew Arnold—Essays in Criticism (the first two).

History.—The lectures of the Fourth Year.
Hallam—Constitutional History, caps. 1, 5 to 14 inclusive.
Macaulay—Vol. I., caps. 2 and 3.

Lectures on the Honour Subjects of the Fourth Year.

Language.—Anglo-Saxon—Sweet's Anglo-Saxon Reader and a portion of one of the longer Anglo-Saxon poems.

Literature.—A course on these special Honour subjects, viz :—the four prescribed plays of Shakespeare and Modern Poetry, with especial reference to Tennyson's Idylls of the King, and the In Memoriam.

History.—Honour Students are required to attend the Course of Lectures on Constitutional History.

---

4. MATHEMATICS AND PHYSICS.

MATHEMATICS.—(*First Year.*)—McDowell's Exercises on Modern Geometry, &c.—Wood's Algebra—Todhunter's Theory of Equations.

MATHEMATICS.—(*Second Year.*)—Hind's Plane and Spherical Trigonometry, —Salmon's Conic Sections, chapters 1 to 7 and 9 to 13 inclusive.—Williamson's Differential and Integral Calculus (selected course).

MATHEMATICAL PHYSICS.—(*Third Year.*)—Minchin's Statics (omitting Chapter 14).—Tait & Steele, Dynamics of a Particle.—Besant's Hydromechanics, Chaps. 1, 2, 3, 5.—Walton's Mechanical and Hydrostatical Problems.—Parkinson's Optics.—Main's Practical and Spherical Astronomy (selected course).

B.A. HONOUR COURSE.

PURE MATHEMATICS.—Williamson's Differential and Integral Calculus.—Boole's Differential Equations (selected course).—Salmon's Geometry of three Dimensions (selected course).

MECHANICS.—Minchin's Statics.—Tait & Steele, Dynamics of a Particle. —Routh's Dynamics of a Rigid Body (selected course).—Besant's Hydromechanics.—Walton's Mechanical Examples.—Walton's Examples in Hydrostatics.

ASTRONOMY.—Main's Astronomy.—Sir John Herschel's Outlines of Astronomy (Part II. The Lunar and Planetary Perturbations)—Godfray's Lunar Theory, or Cheyne's Planetary Theory.

Newton's Principia, Lib. I., Sects. 1, 2, 3, 9, and 11.

LIGHT.—Lloyd's Wave Theory of Light.

ELECTRICITY AND MAGNETISM.—Treatise by Fleeming Jenkin.—Cumming's Theory of Electricity.

HEAT, ACOUSTICS, } As in ordinary course.

Engineering students may be candidates for Honours.

---

5. NATURAL HISTORY AND GEOLOGY.

THIRD YEAR.

(1) *Mineralogy :*—Crystallography. Physical and Chemical Properties of Minerals. Blow-pipe Analysis and determinative Mineralogy. Description of species important as constituents of rocks.

(2) *Lithology*:—Classes of Rocks. Texture and Composition. Description of the more commonly occurring Rocks.

(3) Directions for collection and study in the vacation.

B.A. HONOUR COURSE.

(1) *Mineralogy and Lithology*:—Description of Species, with particular reference to the Economic Minerals of Canada, Calculation of Mineralogical Formulæ, &c. Description of Rocks; Microscopic Examination of Rocks.

(2) *General Geology and Palaeontology*:—An advanced course, in connection with which the students will be required to read Dana's Manual of Geology and Lyell's Student's Elements.

(3) *Canadian Geology*:—In connection with which the students will read Reports of the Geological Survey of Canada, and Dawson's Acadian Geology.

(4) Practical Exercises and Instruction in the methods of Observation and of conducting Geological Explorations, and in the Study of Palæontology. Text-books:—Von Cotta on Ore Deposits, Nicholson's Palæontology.

The Lectures on the above Subjects will be Illustrated with Specimens and accompanied with Demonstrations in the Museum. Excursions for field work will be undertaken when practicable.

Candidates for Honours will be expected to attain to such proficiency as to be able to undertake original investigations in some at least of the subjects of study.

Students in the Faculty of Applied Science may be Candidates for Honours.

---

6. MODERN LANGUAGES WITH HISTORY.

See LORNE MEDAL Course.

---

§ XII. APPARATUS AND MUSEUM.

PHILOSOPHICAL APPARATUS.

LIGHT.—Besides a Foucault's Regulator for the Electric Light, an Oxy-hydrogen Lamp, a Porte-lumière for Solar Light, and the usual instruments for the complete illustration of the phenomena of Reflection, Refraction, Dispersion, Achromatism, Vision, &c., the collection contains the means of illustrating Spectrum Analysis by projection on the screen; a Spectroscope, Duboscq's Projection apparatus for Double Refraction and Polarization, with a large collection of crystals; two Norremberg's Polariscopes, and apparatus for Interference. It has also Duboscq's Diffraction Bench and Apparatus, including the means of measuring the length of a wave of light by Babinet's method, Fresnel's Mirrors for Interference, a Biprism, &c. By means of this last collection photographs of diffrac

tion phenomena have been taken in the College, which are projected on the screen for class illustrations.

ELECTRICITY.—For Electrical experiments there is a large plate-machine with the usual concomitants of Leyden jars, &c. ; also a Holtz machine ; a large Induction coil by Ruhmkorff with Foucault's contact-breaker, giving an eight inc spark ; an Electro magnet of the largest size, with arrangements for experiment in Diamagnetism, and for the " Magnetization of light ; " a Gaugain's Tangent Galvanometer with two circles, by Elliott Brothers, of London ; a Thomson's Astatic Reflecting Galvanometer of high resistance with set of shunts, &c., by the same makers ; other galvanometers ; Wheatstone's Bridge and Wheatstone's Rheostat, &c., for Electrical measurements ; Delezenne's circle to show induction by the earth's magnetism ; Geissler's tubes, &c.

HEAT.—In the collection for Heat there are large silver-plated Reflectors, &c., apparatus to show formation of vapors in a vacuum and maximum tension ; Thermopiles, with condensers ; two different arrangements for exhibiting the phenomena of Calorescence, &c.

SOUND.—The collection for Sound, containing Organ-pipes and Bellows, Tuning-forks, Sonometer, Siren, Vibrating-plates, apparatus for singing flames, &c., is almost wholly from Kœnig, of Paris. The most recent additions include :— The double Siren of Helmholtz, Lissajou's apparatus, Resonators, with arrangements for manometric flames ; Quincke's apparatus for Interference, &c., Meldes' apparatus for the study of vibrating strings ; Tisley's compound Pendulum apparatus and Edison's Phonograph.

MECHANICS AND HYDROSTATICS.—A good collection.

THE MUSEUM OF GEOLOGY AND NATURAL HISTORY.

The collections in Mineralogy and Geology, and part of those in Zoology, are arranged in the Central Hall of the Museum and the gallery surrounding it. The Carpenter collection of Shells occupies a separate fire-proof room. The Botanical Collections occupy the west corridor, and the east corridor is used as a store-room and work-room. All the specimens are, as far as limited space will permit, so arranged and labelled as to be accessible and instructive to Students.

1. MINERALOGY.—The basis of this department is the collection of about 2000 Canadian and Foreign Minerals acquired from the late Dr. Holmes in 1857. Subsequent additions have largely increased this collection, which is now arranged in table cases with drawers beneath, the former containing a complete series of the more important minerals and a suite of crystallographic specimens for the use of students. In the wall-cases at one side of the hall are separate collections of economic minerals, and illustrations of concretionary and stalactitic structures, metamorphism, mineral veins, &c.

2. GEOLOGY AND PALÆONTOLOGY.—The collections consist of large series of Fossils representing the successive formations. A typical series for the use of students is arranged in chronological order in table cases around three sides of the hall, with special and local collections in the drawers below. On the walls and in the centre of the hall are large specimens, casts, &c. Among the more important special collections are those representing *Eozoon Canadense*, Devonian Plants and Post-pliocene Fossils, and the skeletons of English Mesozoic Reptiles presented by Mr. Claxton of Montreal. There are also a number of casts of large Fossils from the Ward collection and from the British Museum. A typical collection of rocks is arranged in two table cases.

3. ZOOLOGY.—In this department the Carpenter collection of Shells, presented by the late Dr. P. P. Carpenter, is a principal feature. The specimens are beautifully mounted on glass tablets, and arranged in six large table-cases and seven upright cases, and in drawers beneath the former. The collections of Radiates, Articulates and Vertebrates are temporarily placed in wall cases on one side of the hall and in the gallery above.

4. BOTANY.—The principal part of this collection is the Holmes Herbarium of Canadian and Foreign Plants, including the Grasses and Carices, which have been revised and named by Col. Munro. There is also a collection of specimens of Canadian woods, presented by the late Dr. Barnston, and by D. Davidson, Esq. a collection of Australian woods, presented by Sir Wm. Dennison; collections of Foreign Ferns and British Plants, presented by G. Barnston, Esq., and collections of Mosses, Lichens, Fungi, and Algæ.

5. ETHNOLOGY.—In this department there are Indian Relics from the site of Hochelaga; the collection of the late Dr. Van Cortland of Ottawa, purchased from his heirs; and a small series of American Skulls.

[*Donations to the Museum are solicited; more especially of Canadian specimens of Fossils, Animals and Economic Mineralogy.*]

Lectures in the Undergraduate Course in the Faculty of Arts,

SESSION OF 1881-82.

FIRST YEAR.

Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
9	Classics.	* French. (*e*)	* French.	* French (*e*)	Mathematics.
10	Mathematics.	Classics.	Classics.	Classics.	Classics.
11	English.	† Mathematics. (*c*) (*e*)	English.	† Mathematics. (*c*) (*e*)	English.
12	Elementary Chemistry.	* German. * Hebrew.	Mathematics.	* German. * Hebrew.	Elementary Chemistry.
1					

SECOND YEAR.

9	* French.	Mathematics. (*f*)	* German.	Mathematics. (*f*)	* French. * German. (*d*)
10	Classics.	Botany.	Logic.	Botany.	* German. † Mathematics.
11	Logic.	Classics.	† Mathematics.	Classics.	Classics.
12	† Mathematics.	* German. (*d*)	* French.	English. (*b*)	Logic.
1	* German.				

THIRD YEAR.

9	History. (*b*)	Classics.	† Classics. † Math. Phy. † Anglo-Saxon.	Classics.	† Classics. † English : † Geol.
10	German (*b*): † Math. Physics. † Mental Philosophy.	French, (*b*). † Ment. Phil.	Mathematical Physics.	French. (*b*)	Moral Philosophy.
11	Math. Physics.	Zoology.	Moral Philosophy.	Zoology.	Mathematical Physics.
12	Moral Philosophy.	⁋ Experimental Physics. Hebrew. (*b*)	Rhetoric.	⁋ Experimental Physics. Hebrew. (*b*)	† Mathematical Physics. German. (*b*)
1					

FOURTH YEAR.

9	† Geology.	Astronomy (*a*). German (*b*)	† Classics. Geology.	Astronomy, (*a*). German (*b*).	† Geology: † Classics.
10	Geology.	† M. Phy.: French (*b*). † M. Ph.	English Literature.	† Math. Phys : † Mental Phil.	Geology.
11	Classics.	Mental Philosophy.	Classics.	Mental Philosophy.	French (*b*). † Anglo-Saxon and Early English.
12	† English.	⁋ Experimental Physics.	† Geology. †Math. Physics.	⁋ Experimental Physics. Hebrew. (*b*)	German. (*b*)
1					

(*a*) During First Term. (*b*) Optional. (*c*) Except from Nov. 1st to Christmas. (*d*) For beginners entering 2nd Year. † For Candidates for Honours.
* The Student may take at his option French or German in the First two years, or, if a Theological Student, Hebrew. ⁋ From Nov. 1st. (*f*) From Nov. 18th.
Classes at 1 P.M. may be changed to other hours. (*e*) The First year lecture hours in French and Honour Mathematics will be interchanged after Nov. 18th.
Library open every day except Saturday, 10 to 4; Saturday, 10 to 1. The Museum will be open as arranged by the Professor of Natural History

Faculty of Applied Science.

THE PRINCIPAL (*ex-officio*).

Professors :—GIRDWOOD, HARRINGTON, BOVEY, MCLEOD.
Lecturer :— CHANDLER.

Associate Professors :—LEACH, DAWSON, MARKGRAF, JOHNSON, DAREY, MOYSE.

Dean of the Faculty :—HENRY T. BOVEY, M.A., C.E.

Librarian :—C. F. A. MARKGRAF, M.A.

The Instruction in this Faculty is designed to afford a complete preliminary training of a Technical as well as a Theoretical nature, to such Students as are preparing to enter any of the various branches of the Professions of Engineering and Surveying, or are destined to be engaged in Assaying, Practical Chemistry, and the higher forms of Manufacturing Art.

Four distinct Branches of study are established, viz :—

(1).—Civil Engineering, (2).—Mechanical Engineering. (3).—Mining Engineering, (4).—Practical Chemistry.

Each of these extends over four, or, under certain conditions, three years, and is specially adapted to the prospective pursuits of the Student.

The Third and Fourth Years in the different Branches are each divided into an Ordinary and an Advanced Course as explained in Section III.

The Degrees conferred by the University upon such Undergraduates of this Department as shall fulfil the conditions and pass the Examinations hereinafter stated, will be, in the first instance, "Bachelor of Applied Science," mention being made in the Diploma of the particular branch of study pursued; and, subsequently, the degree of "Master of Engineering" upon those who have pursued branches 1, 2, or 3, and of "Master of Applied Science" upon those who have pursued Course 4.

Examination for Land Surveyors:—Any Graduate in the Faculty of Applied Science in the Course of Civil Engineering

and Land Surveying may have his term of apprenticeship shortened to one year for the profession of Land Surveyor in Quebec or Ontario, or for the profession of Dominion Land Surveyor. He must, however, pass the preliminary and final examinations before one of the Boards of Examiners. The former examination should be passed before entrance into the Faculty, or during the First or Second Year of attendance.

Students of the Civil Engineering Course, who at the beginning of their Fourth Year give notice to the Faculty of their intention to prepare for the Examination for Dominion Topographical Surveyors, will receive special preparation for that Examination, more especially in Spherical and Practical Astronomy and Geodesy, and may be exempted from the Steam Engine and Hydraulics or from the Designing of the Fourth Year.

Occasional Students may be admitted to the lectures and examinations in the above special work.

---

§ I. MATRICULATION AND ADMISSION.

1. Candidates for Matriculation must present themselves for examination on the 15th of September, 1881. They may, however, be admitted at a later period of the Session, upon special application, if qualified to take their places in the classes in progress.

For Entrance into the First Year the subjects for examination will be :

Mathematics.—Arithmetic; Algebra, to end of Simple Equations; Euclid's Elements, Books I., II., III.

English.—Grammar (including Analysis), Composition and the leading facts of the History of England.

Candidates in the School Examinations of the University, who have passed in Geometry, Algebra and English, may be received as matriculated Students in the First Year.

2. *The full course will extend over a period of FOUR years, but Candidates may enter the SECOND year, and thus reduce the course to THREE years,* if competent to pass a satisfactory examination in the following subjects :

Arithmetic.

Algebra.—To the end of Quadratics.

Euclid.—Books I., II., III., IV., VI., and XI., and the definitions of Book V.

Plane Trigonometry,—including solution of Triangles.

Chemistry.—Inorganic, as in Wilson's Elements.

English.—Grammar (including Analysis), Composition and the leading facts of the History of England.

French or German.—(French as in De Fivas' Grammaire des Grammaires as far as Syntax, and easy translation. German as in Schmidt's German Guide, Part I., and easy translation.)

Candidates unable to pass in Chemistry, French, or German, may be allowed by the Faculty to enter and take the First Year lectures on Chemistry and German.

Candidates who have already completed a portion of a course in some recognised School of Applied Science, may be admitted to an equivalent standing, provided they are able to take up the classes and work.

---

§ II. MEDAL, EXHIBITIONS AND PRIZES.

1. The Lorne Silver Medal (the gift of His Excellency The Right Honourable the Marquis of Lorne).

The Lorne Medal is open for competition to *fourth* year Students of the three courses of Civil, Mechanical and Mining Engineering. Candidates must take a first-class general standing in their Ordinary course, and the Medal will be awarded to the Student who stands *first* in the Advanced Course.

2. The Scott Exhibition (founded by the Caledonian Society of Montreal, in commemoration of the centenary of Sir Walter Scott).

Two Exhibitions of $66 each on this endowment will be offered for competition at the opening of Session 1881-82:—

One to Students entering the Fourth Year, the subjects of Examination being:—

(*a*) The Summer Report. (*b*) Macaulay's History of England, vol. I., cap. I.; Milton's "Areopagitica;" Sir Walter Scott's "Marmion." (*c*) Applied Mechanics.

1872,	Donald A. Stewart.	1877,	J. Swan.
1874,	W. Chipman.	1878,	J. S. O'Dwyer.
1875,	W. J. Sproule.	1879,	J. S. O'Dwyer.*
1876,	W. J. Sproule.		

* W. T. Skaife, proxime accessit, Special Scott Prize.

One to Students entering the Third Year, the subjects of Examination being:—

(*a*) The Summer Report. (*b*) Shakespeare's Henry VIII. (*c*) Mechanism. (*d*) Mathematics.

4. A prize of $20 will be offered for competition at the opening of the Session of 1881-82 to all Students entering the Second Year, the subjects of Examination being :—

(*a*) The Summer Report. (*b*) A paper on the Mathematics of the First Year.

5. AN EXEMPTION FROM FEES will be given to Students entering the Fourth Year as a prize in Descriptive Geometry to be awarded by examination at the beginning of the Fourth Year. The student enjoying this privilege will be required to give assistance to the professor in the drawing-room.

§ III. COURSES OF STUDY FOR SESSION 1881-82.

A. ORDINARY COURSE.

FIRST YEAR.

Civil Engineering.	Mechanical Engineering.	Mining Engineering.	Practical Chemistry.
Arithmetic. Euclid.	Arithmetic. Euclid.	Arithmetic. Euclid.	Arithmetic. Euclid.
Algebra. Trigonometry.	Algebra. Trigonometry.	Algebra. Trigonometry.	Algebra. Trigonometry.
Geometrical Conics.	Geometrical Conics.	Geometrical Conics.	Geometrical Conics.
Solid Geometry.	Solid Geometry.	Solid Geometry.	Solid Geometry.
Descriptive Geometry. (Optional.)	Descriptive Geometry. (Optional).	Descriptive Geometry. (Optional).	Descriptive Geometry. (Optional).
Freehand Drawing.	Freehand Drawing.	Freehand Drawing.	Freehand Drawing.
Chemistry.	Chemistry.	Chemistry.	Chemistry.
English.	English.	English.	English.
French or German.	French or German.	French or German.	French or German.

SECOND YEAR.

Mechanism.	Mechanism.	Practical Chemistry.	Practical Chemistry.
Materials.	Materials.	Mechanism.	
Surveying.	Surveying.	Surveying.	Descriptive Geometry.
Practical Hydraulics.	Practical Hydraulics.	Practical Hydraulics.	
Descriptive Geometry.	Descriptive Geometry.	Descriptive Geometry.	
Algebra.	Algebra.	Algebra.	
Analytical Geometry.	Analytical Geometry.	Analytical Geometry.	
Calculus.	Calculus.	Calculus.	
Mathematical Physics.	Mathematical Physics.	Mathematical Physics.	Mathematical Physics.
Experimental Physics.	Experimental Physics.	Experimental Physics.	Experimental Physics.
Zoology.	Mechanical Work.	Zoology.	Botany.
English.	English.	English.	English.
French or German.	French or German.	French or German.	French or German.

THIRD YEAR.

Applied Mechanics.	Applied Mechanics.	Applied Mechanics.	Practical Chemistry.
Materials.	Materials.	Materials.	Assaying.
Surveying.	Machinery & Millwork	Mining.	Blowpipe Analysis.
Practical Hydraulics.	Practical Hydraulics.	Practical Hydraulics.	Mineralogy.
Drawing.	Drawing.	Practical Chemistry.	
Sphl. Trigonometry.		Blowpipe Analysis.	
Practical Astronomy.		Drawing.	
Mathematical Physics.	Mathematical Physics.	Mathematical Physics.	Mathematical Physics.
Experimental Physics.	Experimental Physics.	Experimental Physics.	Experimental Physics.
Geology.	Mechanical Work.	Geology & Mineralogy.	Zoology.
French or German.	French or German.	French or German.	French or German.

FOURTH YEAR.

Applied Mechanics.	Applied Mechanics.	Assaying.	Practical Chemistry.
Structures in Stone.	Machinery & Millwork.		Metallurgy.
" Timber.	Metallurgy of Iron.	Metallurgy.	Mineralogy.
" Iron.		Geology (advanced).	Geology.
Theoretical Hydraulics.	Theoretical Hydraulics.		
Practical Hydraulics.	Practical Hydraulics.	Practical Hydraulics.	
Steam Engine.	Steam Engine.	Steam Engine.	
Materials.	Materials.	Materials.	
Designs.	Designs.	Designs.	
Estimates. Spec'ns.	Estimates. Spec'ns	Estimates. Spec'ns.	
French or German.*	French or German *	French or German.*	French or German.*

(1) During the summer recess, the Students in the 2nd, 3rd and 4th years are to employ themselves in some practical work ; and they are also to prepare a report on such work, to be handed in not later than October 1st. Allowance will be made for this Report (or Essay) in the subsequent Sessional Examinations.

(2) Students are not allowed to take subjects which do not form part of their course, without the sanction of the Faculty.

* Modern languages not imperative in the fourth year.

B. ADVANCED COURSE.

THIRD YEAR.—The Higher Mathematics, Mathematical Physics and Applied Mechanics.

FOURTH YEAR.—The Higher portions of Applied Mechanics.

All Students must take the Ordinary Course.

Students who have obtained two-thirds of the marks in the Mathematical subjects of the Second Year may enter the Advanced Course of the Third Year, and such Students, if they have passed not lower than Second Class in the French or German of the Second Year, may be exempted from the Modern Languages of the Third Year.

---

§ IV. EXAMINATIONS.

I. FOR THE DEGREE OF BACHELOR OF APPLIED SCIENCE.

There will be a Christmas Examination for Students of the First Year in all the Subjects, and for Students of the following years in those Subjects which they take in the Faculty of Arts. A Sessional Examination will be held at the end of each year.

Candidates for the Degree of Bachelor of Applied Science are liable to be examined :—

1. In all the subjects of the *fourth* year.
2. In the Materials and Applied Mechanics of previous years.
3. In the Pure Mathematics of previous years.
4. In a Problem Paper on the Technical subjects of the whole course.

The Problem Paper is not compulsory, but will serve to determine the relative standing of Students.

Practical Chemistry Students are exempted from Nos. 2 and 3 of the above, but are liable for a special Examination in Practical Chemistry, Experimental Physics, and Biology.

The General Classification for the Degree Examination will be under two heads, viz. :—

1. Those who have deserved Honourable Mention, in order of merit.
2. Those who have satisfied the Examiners, in order of merit.

The Degree Examinations in Mathematics and Materials are to be held at the Christmas preceding the Final.

Certificates of merit may be given to such Students as take the highest places in the Degree Examinations.

Special Certificates may be given for proficiency in particular subjects.

Certificates may be given to Students who have passed the Special Courses added to the curriculum.

Students who take their Degree in one of the Courses provided by the Faculty of Applied Science, may obtain credit in either of the remaining Courses by attending one or more subsequent Sessions, the necessary provision for which will be made.

II. FOR THE DEGREE OF MASTER OF ENGINEERING.

Candidates must be Bachelors of Applied Science of at least three years' standing, and must produce satisfactory certificates of having been engaged during that time upon *bonâ fide* work in either the Civil, Mechanical, or Mining Branch of Engineering.

They must pass with credit an Examination, which will extend over the general Theory and Practice of Engineering, in which papers will be set having special reference to that particular branch upon which they have, during the three preceding years, been engaged.

The Examination will be held once in each year, in the second week of the month of December, and will be partly written and partly *vivâ voce.*

Notice of the intention of a Candidate to offer himself at any Examination for this degree must be sent in, together with the necessary certificates and fees, not less than two calendar months before each Examination is to be held.

III. FOR THE DEGREE OF MASTER OF APPLIED SCIENCE.

Candidates must be Bachelors of Applied Science of at least three years' standing, must present certificates of having been employed during that time under competent guidance in some branch of scientific work, and must pass with credit an Examination in the Theory and Practice of those branches of scientific work in which they may have been engaged. The other conditions as under the last heading.

§ V. SPECIAL PROVISIONS.

1. Occasional Students may be admitted to the Professional Classes upon payment of special fees (§ VII).

2. Undergraduates in Arts may, if allowed by the Faculty of Arts, be admitted to the Professional Classes in Practical Science on payment of the fees for these classes.

3. Students in Applied Science may, by permission of the Faculty, take the Honour Classes in the Faculty of Arts.

4. Students who have passed the Intermediate in Arts not lower than the Second Class in Mathematics, have the privilege of entering the Second Year in Applied Science, and will be exempted from the Mental and Moral Philosophy and the Greek of the Third and Fourth Years in Arts.

5. Undergraduates in Arts of the Second or Third Years or Graduates of any University, entering the Faculty of Applied Science, may, at the discretion of the Professors, be exempted from such lectures in that Faculty as they may have previously attended as Students in Arts, but must pass all the examinations.

---

§ VI. ATTENDANCE AND CONDUCT.

The regulations under this head are in all respects the same as those in force for Undergraduates in Arts. (See page 35.)

---

§ VII. LIBRARY AND MUSEUM.

Students in this Department will have the same privileges with reference to the Library and Museum as Undergraduates in Arts.

---

§ VIII. FEES.

In the Course of Civil Engineering.—$45; Library, $4. In all $49 for each Session.

In the Course of Mechanical Engineering.—$45; Library, $4. In all $49 for each Session.

In the Course of Mining Engineering.—1st Year, $45; 2nd, 3rd and 4th Years, $55; Library, $4. In all $49 to $59 for each Session.

In the Course of Chemistry.—1st Year, $45; 2nd, 3rd and 4th Years, $55, Library, $4. In all $49 to $59 for each Session.

Matriculation Fee, for the First Year (to be paid in the year of entrance only), $4; for the Second Year (exigible from Students who enter in the Second Year, and also from those who have failed in the First Year, and re-entered the Second Year on Examination) $6.

Fee for Degree of Bachelor of Applied Science.—$10.

Fee for Degree of Master of Engineering or Master of Applied Science.—$25.

The fees must be paid to the Secretary and the tickets shewn to the Dean within a fortnight after the commencement of attendance in each session. In case of default, the Student's name will be removed from the College books, and can be replaced thereon only by permission of the Faculty and on payment of a fine of $2.

The B. App. Sc. fee must be paid before the Examination.

Laboratory Students are required to purchase their own chemicals, &c. The larger articles of apparatus will be supplied by the Laboratory, the Students paying $6 per Session for their use, and being responsible for breakage.

Occasional Students may be admitted to the Professional Classes in any year, by payment of the ordinary fee for that year, and $5 for entrance and use of the Library.

Partial students are required to pay the ordinary Library Fee, and in addition, fees to the amount of $10 for each subject; in the case of Chemistry, however, the additional fee is to be $20, or $10 per term.

Students taking Blowpipe Analysis, when it does not form part of their course, are required to pay a fee of $5.

Occasional Students may attend the course of Instruction in Meteorology on paying a fee of $5.

---

§ IX. COURSES OF LECTURES.

I. CIVIL ENGINEERING AND APPLIED MECHANICS.

Professor:—HENRY T. BOVEY, M.A., C.E.

Civil Engineering.

The course of instruction in Civil Engineering will include the following:—Mechanism, Earthwork, Masonry, Carpentry, Structures of Timber, Stone and Iron, the Construction of Common Roads, Rail Roads, Bridges, Viaducts, Tunnels, Canals, River, Harbour and Sea Works, Drainage Works, Lighthouses, Works connected with Irrigation and Water Supply, &c.

The subject for Session 1881-82 will be the Water Supply of cities and towns, which will be treated of under the following heads :—Water *(Rainfall and Evaporation, Springs, &c.)*, Storage of Water Selection of Source of Supply, Measurements of Flow, Reservoir Embankments and Chambers, Systems of Purification, Mains and Distribution Pipes with Appendages, Constant and Intermittent Supply, Pumping Machinery, &c.

N.B.—Students of the Second Year are not required to pass the Examination in this subject.

Applied Mechanics.

The subject of Applied Mechanics will be treated under two heads :—

(*a*). The Strength of Materials, embracing a study of Work, Inertia, Energy and Entropy, the Strength, Stiffness and Resilience of Materials, Beams or Girders, Pillars, Shafts, Structures *(simple and complex)*, Earthwork, Retaining Walls and Arches.

(*b*). Hydraulics, comprising the Theory of Hydrostatics and Hydrodynamics, the Flow of Liquids through Orifices, Pipes and Canals, the Action of a Stream on inclined or curved Vanes *(Fixed or Revolving)*, Hydraulic Machines *(Pressure Engines, Vertical Water Wheels, Turbines, Centrifugal Pumps,,* Pneumatics.

Steam and the Steam Engine.

The course of instruction in this Department will embrace :—The General Description of the Steam Engine, the Theory of Heat, the Application of Heat to Thermal Machines, the Production of Heat and Steam, and also :—

(*a*). The movement and distribution of Steam, including the action of Steam in a Cylinder, the methods and regulation of the distribution of Steam, Systems of Cut-off, the general disposition of Cylinders, Condensers, &c.

(*b*). The modes of transmission and a consideration of certain special machines.

(*c*). The construction of an Engine, under which head will be considered Rivets, Bolts, Screws, Sockets, Keys, Cylinders, Pistons, Organs of Distribution *Slide, Throttle, Clack, and other Valves)*, Organs of Transmission (*Connecting Rods, Beam, Plumber-blocks, Journals, Cranks, Shafting, Eccentrics*).

(*d*). The construction of Special Machines (*Locomotive*).

Designs, Estimates, &c.

Engineering Students will also prepare designs, specifications, and estimates of such works as are usually undertaken by the Engineer.

Each Student works independently, under the personal supervision of the Professor of Engineering, and makes such drawings and calculations as would be needed were the structure designed to be actually carried out.

Instruction will be given in :—

(*a*). The drawing of parts of machines from given dimensions.

(*b*). The use of geometrical drawing in arranging and designing the parts of machines, and the methods of working out various mechanical problems graphically.

(*c*). The designing of bridges, machines, and engineering structures generally.

(*d*). The taking out of quantities and making of estimates from drawings.

II. MECHANICAL ENGINEERING.

Professors BOVEY and MCLEOD.

Mechanism.

The lectures on Mechanism will treat of :—The object and structure of a machine and the parts of a machine, bearings, connections (*simple and complex*), elementary combinations and their classification, shewing the various modifications of motion (*with constant or variable velocity-ratios*), engagements (*teeth of wheels, &c.*), adjustments.

Theory of Machines.

This Branch will comprise :—

(*a*). *The Transmission of Work*, including the measurement of work, the efficiency of machines, dynamical friction, viscosity, and the methods of transmitting work (*by continuous rotation, oscillation, belts, water, and compressed air*).

(*b*). *The Modification of Work and Stores of Energy*, embracing a study of the actual energy of moving pieces, springs and weights.

(*c*). *Governing and Controlling Machines*, including a consideration of uniform effort, variable resistance, machines driven by fluid pressure, differential governors.

(*d*). *Balancing Machinery.*

Mechanical Work.

A course of lectures will be given on the following specific Departments of Mechanical Engineering, and will treat entirely of the principles and results of actual practice :—The different classes of machinery, Belts, Gearing, Forging, Hammers (*Trip, Crank, Steam and Compound*), the Tempering of Steel, Tools, Vise-work, Fitting and Finishing, Lathes and Lathe work, Planing, Slotting and shaping Machines, Boring and Drilling, Milling and Milling tools, Screw-cutting, the Slide-valve, Standard Measures, Gauging Implements, and calculations respecting the speed of Wheels, Pullies, &c.

III. MINING ENGINEERING.

Professor :—B. J. HARRINGTON, B.A., PH.D.

The object of this course is to give Students a knowledge of the characters and mode of occurrence of various economic minerals, together with the methods employed for their extraction and subsequent treatment.

The lectures on Mining are given during the Third Year, and among the subjects taken up the following may be mentioned :—Blasting and the nature and use of different Explosives, Quarrying, Hydraulic Mining, Boring, the Sinking, Timbering and Tubbing of Shafts, Driving and Timbering of Levels, Underground Conveyance and Hoisting, Drainage and Pumping, Lighting and Ventilation of Mines, special methods of Exploitation employed in the working of Metalliferous Deposits or of Coal Seams, &c. During this year also, instruction is given in Blowpipe Analysis, the object of which is to enable Students by means of the blowpipe and a few simple re-agents to detect the nature of different Minerals or Ores. On account of the small amount of apparatus required, and the rapidity with which accurate results may be arrived at, a knowledge of this subject will be found most useful to those engaged in geological or other field-work.

In the Fourth Year a course of lectures on Metallurgy is given, and assays are made of various Ores, Fuels, &c.

NOTE.—The lectures on Mining and Metallurgy are illustrated by a series of Models, of which a list is given in §XI ?

IV. DESCRIPTIVE GEOMETRY AND SURVEYING.

Professor :—C. H. MCLEOD, MA.E.

Descriptive Geometry.

SECOND YEAR.—(1) *Linear Drawing.*—Various straight line constructions. Circles. The Conic Sections. Spirals. Involutes. Cycloids and other curves. Practical applications of the foregoing. (2) *Orthographic projection.*—The planes of projection. The projection of points, straight lines, curves and plane figures. The traces of straight lines and planes. The representation of solids, including bodies bounded by planes, and solids of revolution. The penetration of solids and the development of their surfaces. Sections of solids. Helices and screws. Tangent planes and normals.

THIRD YEAR.—(1) *Orthographic projection,* (Continued). (2) *Spherical projections.*—Orthographic projections of the sphere. The construction of maps, including Mercator's and Flamstead's methods. The graphical determination of spherical triangles. (3) *Isometric projections.* (4) *Shades and Shadows.*—Shadows of points and lines. Brilliant points. Practical problems. (5) *Mathematical Perspective.*—The picture plane and the eye. The perspective of points and lines. Vanishing points and measuring points. Vanishing lines of planes. The perspective projection of solids. Vanishing points of rays of light and of projections of rays. The perspective of shade and shadow.

Surveying.

This course is designed to afford the Student such instruction as will enable him to be of immediate service upon entering the office of an Engineer or Surveyor, and to qualify him to pass all the examinations prescribed in this subject by the Dominion and Provincial Boards of Land Surveyors.

The course of instruction will be as follows :—

SECOND YEAR.—Chain Surveying. Compass urveying. The use and adjustment of the Transit, Theodolite, Level (Dumpy, Y, and other forms), Sextant, Aneroid Barometer, Plane-table and other field instruments. Contour Surveying. Underground Surveying. Plotting and the best methods of calculating areas, both from the plot and directly from the notes.

In addition to the above this Class will, under the personal supervision of the Professor, make a Chain urvey of a tract of country. Each Student will be required to plot the survey from his own notes.

THIRD YEAR.—Topography. Methods of Setting out Work. Indirect and Barometric Levelling. Hydrographic Surveying. Spherical Surveying. Practical operations in the Field.

FOURTH YEAR.—Field operations.

Note.—The Field Operations undertaken by the Students of the 2nd, 3rd and 4th years will comprise a contour survey and an angular survey of a piece of ground; the location of a line of road, including the making of preliminary surveys, the ranging of curves, the tracing, levelling and setting out of the line selected; an Hydrographic Survey,—of which the two latter are done on alternate years. The Students of the 2nd and 3rd years will be required to prepare maps and sections from notes taken, by themselves, in the field.

V. CHEMISTRY.

Lecturer :—B. J. HARRINGTON, B.A., PH.D.

A course of forty-five lectures, illustrated by experiments, is given to all Students of the First Year on the properties and preparation of the Non-Metallic and Metallic Elements, and many of their compounds, the laws of Chemical Combination by weight and volume, the Atomic Theory, Chemical Formulæ and Equations, characteristics of Acids, Bases and Salts, Compound Radicals, &c.

In the Second and Third Years additional instruction will be given to Students of the Mining and Chemistry Courses in the construction of apparatus, preparation of gases, &c.

VI. PRACTICAL CHEMISTRY.

Professor :—GILBERT P. GIRDWOOD, M.D.

This course will be conducted in the Laboratory of the Medical Faculty, and will be specially designed for Chemistry tudents of the Third and Fourth Years. It will include instruction in the method of Qualitative and Quantitative Analysis

of Inorganic and Organic Bodies, Fractional Distillation, determination of Boiling Points, Melting Points, &c.

Students taking these subjects are supposed to have already obtained, in the earlier years of their course, a preliminary knowledge of the use of the Balance, Determination of Specific Gravities, Construction of Apparatus, Preparation of Gases, &c.

VII. GEOLOGY.

Professor :—J. W. DAWSON, LL.D., F.R.. (Logan Professor of Geology.)

Assistant Professor :—B. J. HARRINGTON, B.A., PH.D.

SECOND YEAR.—A preliminary Course in Zoology, with special reference to Fossil Animals.

THIRD YEAR.—Mineralogy, Lithology, Physical and Chronological Geology and Palæontology, Geology of Canada, Methods of Geological Exploration.

FOURTH YEAR (Mining Students only).—Special Studies in Mineralogy and Lithology, Advanced Course in General Geology and Palæontology, Geology of Canada, Practical Geology and Field-work.

VIII. MATHEMATICS AND MATHEMATICAL PHYSICS.

Lecturer :—G. H. CHANDLER, M.A.

The lectures in this course are specially designed to meet the requirements of Students of Applied Science ; those in Mechanics being introductory to Applied Mechanics. The subjects are as follows :—

FIRST YEAR.—(1) Euclid, books 1, 2, 3, 4, 6, with definitions of book 5. (2) Theories of *Loci*, *Transversals* and *Harmonic Division*. (3) *Algebra*, to Progressions. (4) *Plane Trigonometry*, including heights and distances, and the use of Logarithms. (5) Elements of *Solid Geometry*, with elementary mensuration of surfaces and solids. (6) *Geometrical Conic Sections*. The parabola and fundamental properties of the ellipse and hyperbola.

SECOND YEAR.—(1) *Continuation of Algebra*. Progressions. Infinite series. Indeterminate coefficients. Binomial and exponential theorems. Theory of Logarithms. (2) *Analytical Geometry*. Tracing of curves. Determination of Equations. Transformation of co-ordinates. The straight line, circle, and conic sections. (3) *Differential and Integral Calculus*. Differentiation and integration of functions of one variable. Successive differentiation. Maclaurin's Theorem. Applications to Maxima and Minima and to Geometry. (4) *Mechanics*. The triangles, parallelograms and polygons of velocities, accelerations, and forces. Change of units. Inertia. Work and energy. Laws of motion. Motion in a straight line, parabola and circle. Equilibrium of forces in one plane. Friction. Centres of gravity. Action of forces in machines. Moduli of machines. Equilibrium and pressure of liquids. Pumps, Hydraulic Cranes and Presses.

THIRD YEAR.—(1) *Spherical Trigonometry.* Deduction of formulæ for the solution of spherical triangles, and for the spherical excess. (2) *Practical Astronomy.* Diurnal motion. Refraction. Parallax. Principal methods used in the determination of Azimuth, Latitude, Longitude and Time. (4) *Mechanics.* Pressure and equilibrium of gases. Various problems in Mechanics.

For Advanced Students :—Continuation of Analytical Geometry and Calculus with applications to Mechanics.

IX. EXPERIMENTAL PHYSICS.

Professor :—ALEXANDER JOHNSON, LL.D. (Peter Redpath Professor of Natural Philosophy.)

The lectures will embrace 1 :—*Light.*—Theories.—Reflection.—Refraction.—Dispersion.—Interference and Diffraction.—Double Refraction.—Polarisation. 2 :—*Heat.*—Dilatation of Solids, Liquids and Gases.—Specific and Latent Heat.—Radiation and Conduction.—Mechanical Theory of Heat. 3 :—*Electricity.*—Statical and Dynamical ; including Electro-Magnetism.—Magneto-Electricity.—Thermo-Electricity.—Diamagnetism.—Electric Measurements.—Practical Applications to Telegraph, &c. 4 :—*Magnetism.* 5 :—*Sound.*—Theory of Undulations.—Production and Propagation of Sound.—Vibrations of Strings, Rods, and Plates.—Vibration of Fluids.—Musical Sounds.—Text-book : GANOT'S TREATISE on Physics, translated by Atkinson. This Course extends over two years.

The subjects for the Session 1881–82 are Light and Heat.

X. ENGLISH LANGUAGE AND LITERATURE.

Professor :—VEN. ARCHDEACON LEACH, D.C.L., LL.D. (Molson Professor of English Language and Literature.)

Associate Professor :—CHARLES E. MOYSE, B.A.

FIRST YEAR.—English Language and Literature.

SECOND YEAR.—A special course on English Composition.

XI. FRENCH OR GERMAN.

French :—Professor P. J. DAREY, M.A., B.C.L.

German :—Professor C. F. A. MARKGRAF, M.A.

Students of this Faculty are required to take the course in one of these languages provided by the Faculty of Arts.

XII. METEOROLOGY.

Instruction in Meteorological Observations will be given in the Observatory at hours to suit the convenience of Senior Students.

Certificates will be granted to those Students who pass a satisfactory examination on the construction and use of Meteorological Instruments, and on the general facts of Meteorology.

N.B.—Students of the Second, Third and Fourth Years will be required to answer satisfactorily a weekly paper on such subjects of the course as shall be determined by the Faculty.

§ X. LIST OF TEXT-BOOKS.

Engineering :—Rankine's Civil Engineering, Rankine's Machinery and Mill work, Rose's Complete Practical Machinist, Shelley's Workshop Appliances.

Applied Mechanics :—Rankine's Applied Mechanics, Downing's Hydraulics, Goodeve's Elements of Mechanism, Willis' Principles of Mechanism.

Steam :—Rankine's Steam Engine, Rigg's Steam Engine.

Descriptive Geometry :—Millar's Descriptive Geometry.

Surveying :—Gillespie's Land Surveying.

Geology :—Dana's Geology, Dana's Mineralogy, Dawson's Handbook of Zoology and Lecture Notes on Geology, Nicholson's Palæontology, Geological Survey Reports, Dawson's Acadian Geology.

Blowpipe Analysis :—Brush's Determinative Mineralogy and Blowpipe.

Chemistry.—Wilson's Inorganic Chemistry. Fresenius' Qualitative and Quantitative Analysis.

Mathematics :—Todhunter's Euclid, Todhunter's Algebra, Hamblin Smith's Trigonometry, Wilson's Solid Geometry and Conic Sections, Loomis's Analytical Geometry and Calculus, Goodeve's Principles of Mechanics, Chambers's Practical Mathematics.

---

§ XI. MINING AND METALLURGICAL MODELS.

1. Man-Engine.—This is a large working model shewing two forms of the so-called Man-Engine, or Fahrkunst, for raising and lowering miners in deep mines. The Fahrkunst generally consists of two strong beams or rods of wood to which platforms are attached at intervals for the men to stand upon. The rods are suspended in the shaft, and a reciprocating motion communicated to them from a steam-engine or water wheel. When a miner wishes to ascend, he simply steps upon the lowest platform; the rod then rises for, say, twelve feet, and the man steps on to a platform on the opposite rod which lifts him another twelve feet, and so on until the surface is reached.

2.—Boring Tower and Boring Tools.—A model of a form of Boring-tower which has been extensively employed in Belgium, where boring operations have been carried on with great success. It is supplied with Kindt's free-falling apparatus, an ingenious contrivance for preventing the concussion from the chisel being communicated to the rods above. There are also models of several varieties of tools such as are used in extracting broken rods from bore-holes.

3.—Vertical Shaft with Pumps, Man-Engine, Hoisting Apparatus, &c.—This large and beautiful model shows the way in which shafts are timbered and divided into different compartments for hoisting, for man-engine, ladder-way and pumps. It is provided with two large overshot water-wheels, supposed to be placed at a considerable distance from the surface, and affording the necessary power for hoisting as well as for working the pumps and man-engine. The ore is raised in two wooden skips supplied with guides, the one ascending while the other descends.

4.—VERTICAL SHAFT WITH PUMPS AND MAN-ENGINE.—Somewhat similar to No. 3, but having only one water-wheel and no hoisting apparatus.

5.—MODEL SHEWING THE UNDERGROUND WORKING OF A MINE.—By means of this beautifully constructed model an idea may be easily obtained of the ordinary methods of working metalliferous veins of moderate thickness. It shows both shaft and galleries, different methods of timbering and walling, and exploitation by *overhand* and *underhand stoping*.

6.—TIMBERING.—Three models illustrating the partial and complete timbering of galleries.

7.—WALLING.—Three models illustrating the walling of galleries with bricks.

8.—TRAM-WAGGON.—Model of a waggon such as is used in many of the English mines. The box is of wood, strongly bound with iron; the wheels are of iron, and turn upon axles which are specially designed for use on roadways with sharp curves.

9.—SKIP.—Model of a wooden skip or box for raising ore in a vertical shaft.

10.—SKIP.—Model of a wooden skip for hoisting ore in an underlie shaft.

11.—KIBBLE.—Model of a wooden kibble or bucket for raising ore.

12.—HORSE WHIM.—Model of a form of horse-whim once extensively used in the Saxon mining regions. The principle is the same as in the case of the ordinary whim so frequently seen in Cornwall, but the details are more elaborate, as it was originally designed for permanent hoisting.

13.—HARTZ VENTILATOR OR AIR PUMP.—A simple but useful contrivance employed in the mines of the Hartz for temporary ventilation while shafts are being sunk or levels driven.

14.—STAMP BATTERIES.—Working model of three batteries of stamps for stamping ores, gold-bearing quartz, &c. Stamps like this model are employed in some parts of Europe, but those used in this country differ from it considerably.

15.—STOSSHEERD OR SHAKING TABLE.—A machine extensively used in different parts of the world for the separation of ores from the gangue or useless material with which they are commonly associated.

16.—ROTATING BUDDLE.—Like the last, a machine largely used for the concentration of ores.

17.—SLIME BOX OR TRENCH.—A kind of wooden box used for the concentration of "slimes" or pulverized ores.

18.—PATTINSON'S CONCENTRATING APPARATUS.—Model of one of the iron pots and accompanying heating apparatus used in Pattinson's process for the extraction of silver from lead.

19.—BELGIAN ZINC FURNACE.—This is an exact model of furnaces used in Belgium and elsewhere for the extraction of zinc from its ores by distillation in retorts. It shows not only the arrangement of the retorts but also the details of the heating apparatus.

20.—BLAST FURNACE.—This is a model of a blast furnace, the stack of which is supposed to be constructed of masonry. It is made in two sections so that

the Student may obtain a view of the details of the interior. The lining, hearth flues for tapping off the waste gases, &c., are admirably shewn.

21.—REVERBERATORY FURNACE.—Model of an English Reverberatory Furnace made in two sections so as to shew the details of the interior.

§ XII. MECHANICAL MODELS.

The collection of working Models in this Department is illustrative of

(1). The Steam Engine showing the characters of
  (*a*). Horizontal, Vertical, Locomotive and Marine Engines.
  (*b*). Link-motion and reversing gear.
(2). Various form of parallel motion.
(3). Link-work, as employed to produce,—(*a*). Alternate intermittent motion. (*b*). Rotatory and Oscillatory motions with varying velocities. (*c*). Variable motion. (*d*). The motion of a Mortising Machine. (*e*). The motion of a Combination of Hooke's Joint. (*f*). The motion of two parallel axes connected by side-rods. (*g*). Whitworth's quick return motion. (*h*). Boehm's motion of two parallel shafts. (*i*.) The conversion of circular into linear motion.
(4). Rolling and sliding contact, as shewn by
  (*a*). Conical toothed-wheel and toothed cone on Romer's principle.
  (*b*). Skew-bevils.
  (*c*). Worm-wheel and worm.
  (*d*). Face-plates with cross grooves.
  (*e*). A Punching Machine.
  (*f*). Shifting Slides and Cams to shew the different forms and actions of plain cams and tappets.
  (*g*). A model illustrating the various conditions of wrapping contact.
  (*h*). A double rack and segmental toothed wheel producing reciprocating motion.
  (*i*). Non-circular wheels.
  (*j*). Spur wheels with Epycycloidal teeth.
  (*k*). The motion of a Mangle-wheel.
  (*l*). A set of excentric and elliptic toothed wheels.
  (*m*). A triple toothed rack producing reciprocating motion.
  (*n*). The hoop and pin wheel producing intermittent motion.
  (*o*). A combination producing continuous slow motion.
  (*p*). The silent click.
  (*q*). A model illustrating the principle of Calculating Machines.

The School possesses a valuable set of Surveying and Engineering Instruments which Students make use of during the Session, when engaged on Field-work.

LECTURES IN THE FACULTY OF APPLIED SCIENCE.

Years.	Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
First Year.	9		Mathematics (*a*) French (*b*)		Mathematics (*a*) French (*b*)	Mathematics.
	10	Mathematics.		French.		
	11	English.	French (*a*)	English.	French (*a*)	English.
	12	Chemistry.	German.	Mathematics.	German.	Chemistry.
	2				Prac. Chem.	
	3				Do	
	4				Do	
Second Year.	9	French.	Materials.	German.	Practical Hydraulics.	French. German.
	10	Mech. Work.	Botany.		Botany. Mathematics.	German.
	11	Mathematics.	Zoology.	Math. Physics		Math. Physics.
	12		Exp. Physics.	French. German.		English.
	2	Surveying. Prac. Chem.	Mechanism.	Surveying	Drawing. Prac. Chem.	Mechanism.
	3	Drawing.	Drawing.	Drawing.	Do	Drawing.
	4	Do	Do	Do	Do	Do
Third Year.	9	App. Mech.	Materials.	Geology. Machinery.	Practical Hydraulics.	Geology.*
	10	Geology Mech. Work.	French.	Mathematics.	French.	Geology.
	11	App. Mech. (Advanced.)	German.		German.	
	12	Math. Physics	Exp. Physics.		Exp. Physics.	Math. Physics.
	2	Prac. Chem. Drawing.	Drawing.	Drawing. Blowpipe Analysis.	Prac. Chem. Drawing.	Drawing.
	3	Surveying.	Drawing. Mining.	Surveying	Drawing.	Do
	4	Drawing.	App. Mech.	Drawing	Do	App Mech.
Fourth Year.	9	Geology.*	Materials.	Designing	Practical Hydraulics.	Geology.*
	10	Construction.	Designing.	Do	Construction.	
	11	App. Mech. (Advanced.)	Do	Do	Appl. Mech. (Advanced.)	
	12	App. Mech. (Advanced.)	Do	Geology.*		
	2	Assaying. Designing.	Hydraulics.		Assaying. Designing.	Hydraulics.
	3	Designing.	Steam.		Assaying. Designing.	Steam.
	4	Designing.	App. Mech.	Metallurgy.	Designing.	App. Mech.

(*a*) After Nov. 18th. (*b*) Until Nov. 18th. * For Mining Students only.

Field work for Students of the 2nd Year on Mondays, Tuesdays, Wednesdays and Thursdays, for Students of the 3rd Year on Mondays, Wednesdays and Thursdays, during the months of September and October.

Faculty of Medicine.

THE PRINCIPAL (ex-officio).

Professors :—CAMPBELL,
SCOTT,
WRIGHT,
HOWARD,
MCCALLUM,
CRAIK,
FENWICK,

Professors :—DRAKE,
GIRDWOOD,
ROSS,
OSLER,
RODDICK,
GARDNER.

Dean of the Faculty.—G. W. CAMPBELL, A.M., M.D., LL.D.

Registrar.—W. OSLER, M.D.

Demonstrator.—FRANCIS J. SHEPHERD, M.D.

Assistant-Demonstrator.—R. L. MACDONNELL, B.A., M.D.

The forty-ninth Session of the Medical Faculty of McGill University will be opened on Saturday, October 1st, 1881, with a general Introductory Lecture at 11 a.m. The regular lectures will begin on Monday, October 3rd, at the hours specified in the time-table, and will be continued during the six months following.

The Medical College, a large and substantial building situated within the University Grounds, contains two spacious class rooms, Students' waiting-room, Library, Museum, Laboratories, together with a large and well-furnished Dissecting-room.

The class tickets for the various courses are accepted as qualifying candidates for examination before the various Colleges and licensing bodies of Great Britain and Ireland, and the College of Physicians and Surgeons of Ontario.

To meet the circumstances of the General Practitioners in British North America, where there is no division of the profession into Physicians and Surgeons exclusively, the degree awarded upon graduation is that of "Doctor of Medicine and Master of Surgery," in accordance with the general nature and character of the curriculum, as fully specified hereafter. The degree is received by the College of Physicians and Surgeons of the Province of Quebec.

I.

MATRICULATION.

It is very important that intending Students should bear in mind the following: (1) *That if natives of Ontario, and if they wish to obtain the license of the Medical Board of that Province, they must pass the Preliminary Examination prescribed by that Board.* (2) *If natives of the Province of Quebec, they must pass the Matriculation Examination of the Quebec Medical Board. In either case the examination should be passed in the Spring. Both of these are accepted by the University, and a Student who has passed either of them is admitted to study without further examination.* (3) *Natives of the Maritime Provinces and of the United States, if they have not already passed the Matriculation Examination of a recognized University, must present themselves for the University Matriculation.*

(*a*) *University Matriculation Examination.*

This examination is the same as that recommended by the Medical Council of Great Britain. Examinations in conformity therewith will be held the last Saturday in March and the first Saturday in October of each year. Applications may be made to the Registrar of the Faculty till the evening of the previous day. The requirements of the standard for Matriculation are:—(1) English Language, including Grammar and Composition.* (2) English History. (3) Modern Geography. (4) Latin, including Translation from the original and Grammar. (5) Elements of Mathematics, comprising (*a*) Arithmetic, including Vulgar and Decimal Fractions; (*b*) Algebra, including Simple Equations; (*c*) Geometry, including the first two books of Euclid or the subjects thereof. (6) Elementary Mechanics of Solids and Fluids, comprising the elements of Statics, Dynamics and Hydrostatics. (7) One of the following optional subjects:—(*a*) Greek, (*b*) French, (*c*) German, (*d*) Italian, (*e*) any other modern language, (*f*) Logic, (*g*) Botany, (*h*) Elementary Chemistry.

* The ability of the candidate will be fully tested in the following:—"(1) To write sentences in English on a given theme, attention being paid to spelling and punctuation as well as to composition; (2) to write correctly from dictation; (3) to explain the grammatical construction of sentences; (4) to point out the grammatical errors in sentences ungrammatically composed, and to explain their nature; and (5) to give the derivation and definition of English words in common use."

TEXT-BOOKS.—Latin,—Cæsar, Commentaries, Bk. I.; or Virgil, Æneid, Bk. I.

GREEK.—Xenophon, Anabasis, Bk. I., or equivalent.

FRENCH.—Charles XII., Two Books.

NATURAL PHILOSOPHY.—Ganot's Physics.

Graduates in Arts of recognized Universities are not required to submit to the Matriculation Examination, and a certificate of having passed this Examination before the College of Physicians and Surgeons of Ontario or of Quebec will be accepted by this University.

(*b*) *Matriculation Examination of College of Physicians and Surgeons of the Province of Quebec.*

The subjects of examination are as follows :—

Compulsory Subjects :—English, French, Latin, Arithmetic, Algebra, Euclid, History, Geography, Belles-Lettres.

Optional Subjects :—Candidates can select any one of the following :—Greek, Natural and Moral Philosophy.

The Examinations will be held upon Thursday, the 22nd of September, 1881, at Quebec, and on Thursday, the 4th of May, 1882, at Montreal. Applications to be made to Dr. F. W. Campbell, Montreal, or Dr. Belleau, Quebec.

Examination Fee, ten dollars. Should the candidate be unsuccessful, one half the fee will be returned.

Of the four years study *after* having passed the Matriculation Examination, three six months' sessions, at least, must be attended at a University, College, or Incorporated School of Medicine, recognized by the "Provincial Medical Board," and the first session must be attended during the year immediately succeeding the Matriculation Examination.

(*c*) *Matriculation Examination of the College of Physicians and Surgeons of the Province of Ontario.*

The following are the latest regulations of the Ontario Medical Board respecting this Examination :

"On and after July 1st, 1881, every one desirous of being registered as a Matriculated Medical Student in the Register of this College, except as hereinafter provided, must present to the Registrar the Official Certificate of having passed the High School Intermediate

Examination, with Latin included, whereupon he shall be entitled to be so registered upon the payment of twenty dollars, and giving proof of his identity.

The said Examination to embrace the following subjects :

Compulsory :

a. ARITHMETIC, ALGEBRA and EUCLID.
b. ENGLISH GRAMMAR, COMPOSITION and DICTATION.
c. HISTORY, GEOGRAPHY and ENGLISH LITERATURE.
d. NATURAL PHILOSOPHY, CHEMISTRY and BOOK-KEEPING.
e. LATIN.

And one of the following :—

Optional :

a. GREEK.
b. FRENCH.
c. GERMAN.

Graduates in Arts, or Students having Matriculated in Arts in any University in Her Majesty's Dominions, are not required to pass this Examination, but may register their names with the Registrar of the College, upon giving satisfactory evidence of their qualifications, and upon paying (after July 1st, 1881) the fee of Twenty Dollars."

It is held on the first Tuesday and Wednesday of April, at Toronto.

II.

ENREGISTRATION.

The following are the University Regulations :—

All Students desirous of attending the Medical Lectures shall, at the commencement of each Session, enrol their names and residences in the Register of the Medical Faculty, and procure from the Registrar a ticket of Enregistration, for which each Student shall pay a fee of $4 ; excepting in the Clinical Classes, in which enregistration for Students of other Schools shall not be compulsory.

The said Register shall be closed on the last day of October in each year, and no tickets obtained from any of the Professors shall be received without previous enregistration.

Enregistration in the Summer Session is compulsory upon all Students, whether attending one or more of the Classes.

III.

COURSES OF LECTURES.

1 Anatomy.—[Prof. Scott.]—The importance of Anatomy, both descriptive and in its relation to Medicine and Surgery, is duly considered by the Professor, who employs chiefly the fresh subject in the illustration of the lectures, aided, however, by dried preparations, wax models, plaster casts of dissections, plates, &c., the full size of life.

2 Practical Anatomy—[Drs. Shepherd and MacDonnell.]—Special attention is devoted to this important branch, the teaching being similar to that of the best European schools. The Dissecting-Room is open from 8 a.m. to 10 p.m., the Demonstrators' hours are from 10 to 12 a.m., and 8 to 10 p.m. Special Demonstrations on the Brain, Thorax, Abdomen, Bones, etc., are frequently given. Every Student must be examined *at least* three times on each part dissected, and, if the examinations are satisfactory, a certificate is given. Prizes are awarded at the end of the Session for the best examination on the fresh subject. Material provided under cost.

3 Chemistry.—[Prof. Girdwood.]—Inorganic Chemistry is fully treated: a large portion of the course is devoted to Organic Chemistry and its relations to Physiology. The branches of Physics bearing upon or connected with Chemistry also engage the attention of the Class. For experimental illustration, abundant apparatus is possessed by the Professor, among which may be enumerated, a powerful Air Pump—Oxy-Hydrogen Microscope—Polariscope—extensive series of Models of Crystals, Electrical and Galvanic apparatus, steam engine, &c., &c.

4 Practical Chemistry.—[Prof. Girdwood.]—Thorough instruction is given in the different departments of Practical Chemistry in the Laboratory of the Faculty under the personal supervision of the Professor. The course includes blow-pipe manipulations, qualitative and quantitative analysis, toxicological investigations, &c., &c. This class may be taken in the Summer Session.

5 Institutes of Medicine.—[Prof. Osler and Assistant.]—Embraced in this course are the following classes:—

(*a*) **Physiology,** comprising,

(1) A full course of didactic lectures upon the structure and functions of the various organs of the body in health. The lectures are illustrated by fresh preparations, diagrams, plates and models, and, when practicable, by experiments.

(2) Practical demonstrations held every Saturday from 2 to 4 p.m. In this class a complete series of histological preparations is exhibited and explained. Specimens illustrative of physiological anatomy and practical physiology are also shown, and the Students invited to propound and discuss any questions which may not have appeared clear to them.

(3) Practical Histology—normal and pathological. A course of 25 lessons—Microscopes, re-agents and material provided. This course is generally held during the Summer Session, but will also be conducted during the Winter if a class of 10 Students be formed. It comprises thorough instruction in the use of the Microscope and the preparation of the tissues, each Student preparing for himself during the course a cabinet of 100 or more specimens.

(*b*) **Pathology,** comprising,

(1) A limited number of lectures on General Pathology, which are included in the systematic course on the Institutes.

(2) Pathological Demonstrations—weekly—Saturday, 11 a.m. This course is based upon, and conducted, as far as possible, in the same way as that of Prof. Virchow, at the Berlin Pathological Institute. Specimens of all kinds are collected throughout the week, kept until Saturday, and then brought before the class, when practical comments are made upon them. An idea of the amount of material at command may be gathered from the fact that over 150 fresh pathological specimens, illustrative of almost all the common forms of disease, were laid before the class during the past session.

(3) Instruction in Post-Mortems—The Autopsy Room of the General Hospital is in charge of the Professor, and the post-mortems are performed by the Students in rotation, under his supervision. System and thoroughness in inspection are insisted upon, the method followed being that of Virchow. As far as possible, attention is drawn to the Medical Anatomy of the thoracic and abdominal organs. In connection with this class, aided by the Professor of Medical Jurisprudence, two Coroners' Inquests will be conducted during the Session before the class, and the Medico-legal aspects of post-mortems dwelt upon.

6 Materia Medica.—[Prof. Wright.]—In this course the ordinary Medicines officinal in the British Pharmacopœia are taken up in classes according to their chief actions, and described under the various heads peculiar to Pharmacology. The Therapeutics of each are fully detailed, under the effects that follow from different doses. Those from toxic or over-doses are added, together with the mode of treatment, etc. The course is illustrated from a cabinet of the various drugs and their preparations, and the plates of Wagner, Roque, Stevenson and Churchill are also shewn. Analytical experiments with the ordinary re-agents are exhibited.

7 Theory and Practice of Medicine.—[Prof. Howard.]—While the lectures on this subject are mainly devoted to Special Pathology and Therapeutics, the department of General Pathology in this University being included in the Institutes of Medicine, no opportunity is lost of illustrating and explaining the *general* laws of disease. With the exception of certain affections seldom or never observed in this country, all the important diseases of the body, not described from the chairs of Surgery and Obstetrics, are discussed, and their Pathological Anatomy illus-

trated by the large collection of morbid preparations in the University Museum, and by fresh specimens contributed by the Demonstrator of Morbid Anatomy.

The College possesses an extensive series of Anatomical plates illustrative of the histological and anatomical appearances of disease, and the wards of the General Hospital afford the lecturer ample opportunities to refer to living examples of very many of the maladies he describes, and to give the results of treatment.

8 Clinical Medicine.—[Prof. Ross.]—Attendance is given in the Medical Wards of the Montreal General Hospital on three days of every week. Accurate reports of all cases are kept by duly appointed clinical clerks, and are systematically read before the class. Instruction is given by the bedside, and special inducements are offered to every pupil to take part in the physical examination of patients. The mode of conducting investigations, the use of the microscope, the value of the thermometer and ophthalmoscope, etc., in Medical Diagnosis, are all explained and illustrated. Senior Students are called upon in rotation to examine new cases before the class, and to be examined thereon as to their general knowledge. In addition, one weekly Clinical Lecture is delivered, bearing upon some case or cases of importance which may happen to be under observation at the time. Special attention is directed to Medical Anatomy, and candidates for the degree will be examined thereon.

9 Surgery.—[Prof. Fenwick.]—Divided into Principles and Practice, including Surgical Anatomy and Operative Surgery, exhibited on the subject. The various surgical instruments and apparatus are exhibited, and their uses and applications explained and practically illustrated.

10 Clinical Surgery.—[Prof. Roddick.]—This course is eminently practical, consisting of bedside instruction and lectures delivered weekly, illustrative of Surgical cases actually present in the wards of the General Hospital. The class is taken charge of by the Teacher on alternate days, when the reports of the Clinical clerks are read and criticized, and fresh cases examined by the senior Students. The Surgical dressings are, as much as possible, reserved for these occasions, so as to give all present an opportunity of participating in the application of splints to fractures, dressing of wounds, minor operations, etc. Major operations are performed in the spacious theatre attached to the Hospital, which is so admirably constructed that the most distant can generally obtain a fair view of the operation. This is also used as a Lecture Room by the Clinical Professors. All of the recently invented appliances for the treatment of Surgical disease have been introduced into the Hospital, prominent among which is a complete outfit of Lister's Antiseptic Apparatus, so that this excellent method of treating wounds is now almost universally adopted.

11 Midwifery.—[Prof. McCallum.]—Including diseases of women and children, illustrated by a series of drawings on a large scale, by humid preparations, by models in wax, by the use of the artificial Pelvis, and by cases in the wards of the Lying-in-Hospital.

12 Medical Jurisprudence.—[Prof. Gardner.]—This course includes *Insanity*, to which a good deal of attention is devoted, the subject being treated of in its Medical as well as Medico-legal aspects. Special attention is devoted to the subject of blood stains, the Clinical, Microscopic and Spectroscopical tests for which are fully described and shown to the class. The various spectra of blood in its different conditions are shown by the Sorby-Browning Micro-spectroscope, so well adapted for showing the reactions with exceedingly minute quantities of suspected material. Recent researches in the diagnosis of human from animal blood are alluded to. In addition to the other subjects usually included in a course of this kind, Toxicology is taken up. The modes of action of poisons, general evidence of poisoning and classification of poisons are first treated of, after which the more common poisons are described with reference to symptoms, post-mortem appearances, and chemical tests. The post-mortem appearances are illustrated by plates, and the tests are shown to the Class.

13 Hygiene and Public Health.—[Prof. Gardner.]—A three months' course of Lectures will be delivered on this subject, the attendance upon which is now compulsory.

14 Ophthalmology and Otology.—[Dr. Buller.]—Will include a course o lectures on diseases of the Eye and the Ear, both Didactic and Clinical. In the former the general principles of diagnosis and treatment will be dealt with ; in the latter, cases illustrative of the typical forms of ordinary diseases of these organs will be exhibited and explained to the class, and afterwards placed under the special care of gentlemen who may show themselves competent to take charge of them. A Course of Operations on the Cadaver will be open to such Students as may wish to avail themselves of the same.

15 Botany and Zoology.—[Prof. Dawson.]—The Course in Botany is illustrated by specimens, diagrams, models, and the microscope. Students have access without any additional fee to the lectures in Zoology in the Faculty of Arts, and to the Natural History Museum of the University and the Museum of the Natural History Society of Montreal.

16 Helminthology.—A course of six lectures on the Parasitic Diseases of Man and the Domestic Animals. (Prof. Osler.) The life history and development of the Entozoa, together with the diseases caused by them, are fully considered. The lectures are illustrated by a series of beautiful diagrams, and by fresh and prepared specimens.

The following are extracts from the University Regulations with respect to the courses of Lectures :

1st. Each Professor shall deliver at least five Lectures during the week, except in the classes of Clinical Medicine and Clinical Surgery, in which three bedside demonstrations and one Clinical Lecture shall be given ; and in that of

Medical Jurisprudence, if extended through six months, in which case three Lectures a week will suffice.

2nd. Every Lecture shall be of one hour's duration.

3rd. Every Professor shall occasionally examine his class upon the subjects treated of in his preceding Lectures, and every such examination shall be considered a Lecture.

4th. A roll of the names of the Students attending each class shall be called from time to time.

IV.

QUALIFICATIONS FOR THE DEGREE.

The following are extracts from the Regulations respecting the qualifications of Candidates for the Degree in Medicine :

1st. No one shall be admitted to the Degree of Doctor of Medicine and Master of Surgery, who shall not either :—1st, have attended Lectures for a period of at least four six months' sessions in this University, or some other University, College, or School of Medicine, approved of by this University; or, 2ndly, have studied medicine during at least four years, and during that time have attended Lectures for a period of at least three six months' Sessions, either in this University, or some other University, College, or School of Medicine approved of by this University.

2nd. Candidates for the Final Examination shall furnish Testimonials of attendance on the following branches of Medical Education, viz :—

Anatomy. *Chemistry.* *Materia Medica and Pharmacy.* *Institutes of Medicine.* *Principles and Practice of Surgery.* *Midwifery and Diseases of Women and Children.* *Theory and Practice of Medicine.* *Practical Anatomy.* *Clinical Medicine.* *Clinical Surgery.*	*Of which two Courses will be required of six months' duration.*
Medical Jurisprudence.	*Of which one Course of six months' or two Courses of three months' will be required.*
Practical Chemistry. *Botany or Zoology.* *Hygiene.*	*Of which one Course will be required of three months' duration.*

And a Course of not less than twenty-five Demonstrations upon Microscopic Anatomy, Physiology, and Pathology.

Provided, however, that Testimonials equivalent to, though not precisely the same as those above stated may be presented and accepted.

3rd. The Candidate must give proof by ticket of having attended during eighteen months the practice of the Montreal General Hospital, or that of some other Hospital approved of by this University, and have compounded medicines for six months.

4th. He must also give proof by ticket of having attended for at least six months the practice of the University or other Lying-in-Hospital approved of by this University, and of having attended at least six cases of accouchement.

5th. No one shall be permitted to become a Candidate for examination who shall not have attended at least one Session of this University, and one full course of all the branches included in its curriculum.

6th. Courses of less length than the above will only be received for the time over which they have extended.

7th. Every Candidate for the Degree must, on or before the fifteenth of February, present to the Dean of the Medical Faculty testimonials of his qualifications, entitling him to an examination, and must at the same time deliver to the Dean of the Faculty the following Certificate :—

MONTREAL,———18—

I, the undersigned, being desirous of obtaining the Degree of Doctor of Medicine and Master of Surgery, do hereby declare that I have attained the age of twenty-one years, or (if the case be otherwise), that I shall have attained the age of twenty-one years before the next graduation day, and that I am not (or shall not be at that time) under articles as a pupil or apprentice to any Physician, Surgeon, or Apothecary. (Signed,) A. B.

8th. The trials to be undergone by the candidate shall be such as are referred to under Section V.

9th. The following Oath or affirmation will be exacted from the Candidate before receiving his degree :

SPONSIO ACADEMICA.

In Facultate Medicinæ Universitatis.

Ego, A———B———, Doctoratus in Arte Medica titulo jam donandus, sancto coram Deo cordium scrutatore, spondeo ;—me in omnibus grati animi officiis erga hanc Universitatem, ad extremum vitæ halitum, perseveraturum ; tum porro artem medicam caute, caste, et probe exercitaturum ; et, quoad in me est, omnia ad ægrotorum corporum salutem conducentia, cum fide procuraturum ; quæ denique, inter medendum, visa vel audita silere conveniat, non sine gravi causa vulgaturum. Ita præsens mihi spondenti adsit Numen.

10th. The Fee for the Degree of Doctor of Medicine and Master of Surgery

shall be twenty dollars, to be paid by the successful candidate immediately after examination, together with a Registration fee of one dollar.

11th. The money arising from the fees of Graduation, as well as those of Enregistration, shall be applied to the enlargement of the Medical Library and Museum, and to defraying their expenses.

V.

EXAMINATIONS.

In each class a weekly examination is held to test the progress of the Student; and in addition two or three written examinations are given throughout the Session.

The examinations at the close of each Session are arranged as follows :

1st Year—Sessional Examination.

ANATOMY.—Bones, Ligaments, Muscles, Viscera.

PHYSIOLOGY.—The Tissues, Blood, Circulation, Respiration, Digestion.

CHEMISTRY.—*Chemical Physics.*—Molecular Forces; Heat, Light, Electricity, and Magnetism.

Chemical Philosophy.—Laws of Combination; Nomenclature; Symbolic Notation; Classification of Elements.

MATERIA MEDICA.—Preparation, Characters, and Adulterations of Medicines.

PRACTICAL ANATOMY.—Bones, Ligaments, Muscles, Viscera.

BOTANY.

2nd Year—Primary, Pass Examination.

ANATOMY.

PRACTICAL ANATOMY.

PHYSIOLOGY.

CHEMISTRY.

PRACTICAL CHEMISTRY.

MATERIA MEDICA.

3rd Year—Sessional Examination.

MEDICAL JURISPRUDENCE WITH TOXICOLOGY.

HYGIENE.*

MEDICINE.—Classification of diseases. Pathology of Zymotic diseases. Continued, periodical and eruptive fevers. Constitutional diseases. Diseases of Kidney.

SURGERY.—Surgical Pathology, Wounds, Fractures, Dislocations.

MIDWIFERY.—Organs of generation of the female, and changes in them which result from conception. Signs of Pregnancy—Diseases of Pregnancy—Pelvis and its deformities.—Mechanism of Labor.

4th Year—Final Pass Examination.

MEDICINE.

SURGERY.

MIDWIFERY.

CLINICAL MEDICINE.

CLINICAL SURGERY.

MEDICAL ANATOMY.

SURGICAL ANATOMY.

By means of the above arrangement a certain definite amount of work must be accomplished in each year, an equitable division is made between the Primary and Final branches.

It was not thought advisable that Students should *pass* finally on important subjects of the Primary branches at the end of the first year, hence the second year examination embraces the whole range of the Primary subjects, and the same holds good for the Final branches in the 3rd and 4th Year, with the exception of Medical Jurisprudence and Hygiene, which may be finally passed at the end of the 3rd Year.

The Sessional Examinations at the close of the 1st and 3rd Years are compulsory upon all Students, and they will be rated according to merit.

*May be taken at the end of the Second Year.

With regard to the Primary Examination at the end of the 2nd Year, it remains optional with the Student whether he passes in all the branches or leaves two for the 3rd Year. In any case, Chemistry and one other must be taken at the close of the 2nd Year.

VI.

SCHOLARSHIPS, MEDALS AND PRIZES.

1st. The Holmes Gold Medal, awarded to the Student of the graduating class who receives the highest aggregate number of marks for the best examinations, written and oral, in both Primary and Final Branches.

2nd. A prize in books awarded for the best examination, written and oral, in the Final Branches. The gold medallist is not permitted to compete for this prize.

3rd. A prize in books awarded for the best examination, written and oral, in the Primary Branches.

4th. The Sutherland Gold Medal, awarded for the best examination in Theoretical and Practical Chemistry, together with creditable examination in the Primary Branches.

5th. A Scholarship of the value of $100, presented by Mr. David Morrice, tenable for one year, given to the Student who passes the best theoretical and practical examination in the Institutes of Medicine.

A prize in books for the best examination in Practical Anatomy.

A prize in books for the best examination in Botany.

A money prize of $25 for the best collection of Plants. Candidates must be Students in Botany of the previous Session, and the collections or duplicates of them must remain in the College Museum.

VII.

FEES.

Distributed according to years, the class fees are as follows:

FIRST YEAR.

Anatomy	$12 00
Institutes of Medicine (Physiology and Pathology, including Demonstrations)	16 00
Materia Medica	12 00

Chemistry	12 00
Botany	5 00
Practical Anatomy	10 00
Dissecting Material	5 00
Enregistration	4 00
Total	$76 00

SECOND YEAR.

The same, without Botany, but with Hygiene, $6, and Practical Chemistry, $12—Total	$89 00

THIRD YEAR.

Medicine	$12 00
Clinical Medicine	12 00
Surgery	12 00
Clinical Surgery	12 00
Midwifery	12 00
Med. Jurisprudence	10 00
Enregistration	4 00
Total	$74 00

FOURTH YEAR

The same with the omission of Jurisprudence—Total	$64 00

HOSPITAL FEES.

Montreal General Hospital, Perpetual Ticket	$20 00
University Dispensary	5 00
University Lying-in-Hospital	8 00
	$33 00

Graduation Fee	$21
Matriculation Fee, payable only if the Student takes the University Matriculation	$5
Total Collegiate and Hospital expenses, spread over four years, about	$375

First Year Students are advised to take out the Hospital ticket, and attend the out-door practice.

It is to be understood that a Student wishing to take any other class than those of his year can do so on payment of the class fee.

Fees are payable in advance.

VIII.

TEXT BOOKS.

ANATOMY.—Gray, Wilson, Sharpey and Quain.

PRACTICAL ANATOMY.—Heath's and Ellis' Dissectors, Holden's Dissector and Landmarks.

CHEMISTRY.—Fownes, Miller, Roscoe.

PRACTICAL CHEMISTRY.—Odling, Galloway, Fresenius.

MATERIA MEDICA.—Pereira's Manual by Farre, Bently, and Warrington.

INSTITUTES OF MEDICINE.—*Physiology*.—Foster, (Am. Edit.) Kirke's Hand-Book, Dalton, Huxley. *Pathology*.—Green, Virchow on Post-Mortems, Orth's Compendium.

PRACTICAL HISTOLOGY.—Rutherford, Schafer.

SURGERY.—Holmes' Surgery, Erichsen, Druitt, Bryant.

PRACTICE OF MEDICINE.—Flint, Roberts, Bristowe, DaCosta.

MEDICAL JURISPRUDENCE.—Taylor's Jurisprudence, Guy and Ferrier's Forensic Medicine, Woodman & Tidy's Handbook, Maudsley on Insanity, Shepherd's Lectures on Madness.

MIDWIFERY.—Churchill, Ramsbotham, Cazeaux, Leishman, Playfair.

HYGIENE.—Parks, Hammond, Wilson.

IX.

MUSEUM.

Most of the usual Pathological Specimens are collected here, obtained from Hospital and private practice. They are largely used in illustrating the lectures on Medicine and Surgery. There are also wax and papier-mache models.

Graduates of the University are invited to contribute specimens.

X.

LIBRARY.

This comprises between six and seven thousand volumes, including all the standard text-books and works of reference, together with

complete files of the leading periodicals. Students may obtain books on making a deposit of $4.00, which is refunded on returning the volumes. During the past year the Library has been thoroughly gone over, a card-catalogue prepared, and many new works added.

XI.

McGILL MEDICAL SOCIETY.

This Society, composed of enregistered Students of the Faculty, meets once a week during the Summer Session, and fortnightly during the winter, for the reading of papers and the discussion of medical subjects. It is presided over by a physician chosen by the members.

A reading room has been established in connection with the Society, in which the leading English and American medical journals are on file.

XII.

COST OF LIVING, &c.

This will, of course, vary with the tastes and habits of the Student, but the necessary expenses need not exceed those in smaller towns. Good Board may be obtained from $14 to $20 per month. A list of Boarding-houses is prepared annually by the Secretary of the University, and may be procured from the Janitor at the Medical College.

XIII.

HOSPITALS.

MONTREAL GENERAL HOSPITAL.

The Montreal General Hospital affords ample means for the instruction of Students in Clinical Medicine and Surgery. The daily number of beds occupied by patients averages from 140 to 150, and during epidemic visitations has reached a much higher number. The Governors have also erected a Hospital for Children, contiguous to the Reid Wing of the present building. The Students have thus an opportunity of becoming familiar with nearly all the diseases of suffering humanity, and with the peculiarities imparted to them by infancy, adolescence, maturity and declining age.

The large number of out-door patients that are treated in the Hospital, averaging from sixty to seventy daily—supply illustrations of most of the diseases of infants and children, of very many of the eye and skin, and of those chronic and ill-defined ailments which, as they do not require admission to the wards of a hospital, would not otherwise come under the observation of the Student.

The large number of patients affected with diseases of the eye and ear, now attending the out-door department, will afford Students ample opportunity to become familiar with all the ordinary affections of those organs, and to make themselves proficient in the use of the ophthalmoscope, and it is hoped that every Student will thus seek to gain a practical knowledge of this important branch of Medicine and Surgery. Operations are performed on the eye, by Dr. Buller, after the out-door patients have been seen, and Students are invited to attend the same, and, as far as practicable, to keep such cases under observation so long as they remain in the Hospital.

The shipping contributes many examples of accidents and surgical cases.

Clinical Clerks to both medical and surgical wards are appointed every three months, and each one during his term of service conducts, under the immediate direction of the Clinical Professors, the reporting of all cases in the ward allotted him. The holding of one of these offices is found to be of the greatest possible advantage to Students, as affording a true *practical* training for his future professional life. They will be awarded on application at the end of each Session to final Students of that year, in order of their standing in the primary examination.

Dressers are also appointed to the Surgical wards and to the Out-door Department. For these appointments application is to be made to the Professor of Clinical Surgery, and to the Out-door attending Physicians.

The Operating Room (used also for a lecture room) is so constructed as to enable the Students to obtain a good view of the operations.

MONTREAL DISPENSARY.

ST. ANTOINE STREET.

About 10,000 patients yearly are treated at this Institution. The cases are of great variety, comprising a large number of pulmonary affections and children's diseases. Minor operations are of daily occurrence, and excellent practice is afforded in the application of splints and bandages. The attending Physicians furnish Students with all possible facilities. The hours of attendance are from 12–2 daily.

UNIVERSITY LYING-IN HOSPITAL.

This is under the direction of the Professor of Midwifery. Students who have already attended one course of his lectures are furnished with cases in rotation; they are advised to attend this Institution as much as possible during the summer, when, since there are as many patients and not so many pupils as in winter, a larger proportion of cases falls to the share of each.

The Assistant to the Professor of Midwifery attends each case, and gives instruction to the students in the methods of examination and the diagnosis of presentations.

UNIVERSITY DISPENSARY.

This Dispensary was established two years ago for special clinical instruction in Diseases of Women; this year special clinics have been established at the same place, for diseases of children and for diseases of the skin.

Diseases of Women.—The difficulty of affording to senior students practical instruction in gynæcology is felt in most schools, as women will not present themselves for examination before a large class of men. The plan followed for the past two years with marked success has been the limitation of the number of students to two or three, in rotation, who assist at the examinations, and receive instruction in the diagnosis and treatment of uterine diseases and the use of gynæ-

cological instruments. The attendance is on Tuesdays, Thursdays and Saturdays, 1–4 p.m.

Diseases of Children.—The clinic is on Tuesdays, Thursdays and Saturdays at 11 a.m., when the patients are seen and instruction given on the cases.

Diseases of the Skin.—The Surgeon in charge will attend every Monday and Friday at 2 p.m. Arrangements will be made whereby a limited number of Students can be present on each occasion. The department will be under the direct supervision of the Professor of Clinical Surgery.

XIV.

PAST SESSION.

The total number of students enregistered in this Faculty during the past year was 168, of whom there were, from—

Ontario,	79	New Brunswick,	9
Quebec,	48	P. E. Island,	5
Nova Scotia,	5	Newfoundland,	1
Manitoba,	1	West Indies,	1

United States, 19.

The following gentlemen, 36 in number, have passed their Primary Examination on the following subjects: Anatomy, Practical Anatomy, Chemistry, Practical Chemistry, Materia Medica and Pharmacy, Institutes of Medicine and Botany or Zoology. Their names and residences are as follows:

Allen, Clarence E.....East Farnham, Q.
Bangs, Edson C.....Faribault, Minn.
Bonesteel, S. A.....Columbus, Neb.
Bowser, James C.....Kingston, N.B.
Brown, C. O.....Lawrenceville, Q.
Cameron, C. E.....Montreal, Q.
Cameron, J. W.....Montreal, Q.
Cattenach, Angus M.....Dalhousie Mills, O.
Clarke, H. J.....Pembina, Dakota.
Cousins, W. C.....Ottawa, O.
Derby, W. J.....North Plantagenet, O.
Deardan, George A.....Richmond, Q.
Gardner, J. J.....Beauharnois, Q.

Grant, James A., B.A..... Ottawa, O.
Gray, James ..... Brucefield, O.
Hanvey, Chas. B. H..... Cleveland, Ohio.
Hopkins, Joseph A..... Cookshire, Q.
Harrisson, J. H..... Moulinette, O.
Howard, Robt. J. B., B.A..... Montreal, Q.
Jack, W. D. Brydone, B. A..... Fredericton, N.B.
Kelly, P. N..... Rochester, Minn.
Lathern, John S..... Yarmouth, N.S.
Loring, J. B..... Sherbrooke, Q.
McCorkill, Robert K..... Montreal, Q.
Musgrove, Wm. J..... West Winchester, O.
Muckey, Floyd S..... Medford, Minn.
O'Brien, T. Pierce..... Worcester, Mass.
Page, T. A..... Brockville, O.
Poaps, Allen P..... Osnabruck Centre, O.
Rutledge, And. J..... Bayfield, O.
Rutherford, Clarendon, M.A..... Waddington, N.Y.
Scott, Walter McE..... Winnipeg, Man.
Sihler, George A..... Simcoe, O.
Smith, E. W., B.A..... West Meriden, Conn.
Stewart, Andrew ..... Howick, Q.
Thompson, W. E..... Harbour Grace, Nfld.

The following gentlemen, 38 in number, have fulfilled all the requirements to entitle them to the degree of M.D., C.M., from the University. These exercises consist in examinations, both written and oral, on the following subjects: Principles and Practice of Surgery, Theory and Practice of Medicine, Obstetrics and Diseases of Women and Children, Medical Jurisprudence and Hygiene,—and also Clinical Examinations in Medicine and Surgery conducted at the bedside in the Hospital:

Bonesteel, S. A..... Columbus, Neb.
Brown, T. L..... Ottawa, O.
Cameron, Paul..... Lancaster, O.
Carson, J. H..... Port Hope, O.
Cormack, W..... Guelph, O.
Feader, H. C..... Iroquois, O.
Fraser, H. D ..... Pembroke, O.
Fielde, E. C..... Prescott, O.
Grey, W. L..... Pembroke, O.
Gordon, C. M..... Ottawa, O.
Harvie, J. B..... Ottawa, O.
Heyd, H. E..... Brantford, O.

Higginson, H. A. ..... L'Orignal, O.
Houston, D. W. ..... Belleville, O.
Hunt, J. J ..... London, O.
Josephs, G. E. ..... Pembroke, O.
Lang, W. A. ..... St. Marys, O.
Laurin, E. J. ..... Montreal, Q.
Lunam, Henry, B.A. ..... Wakefield, Q.
Macdonald, R. T. ..... Montreal, Q.
McGannon, E. A ..... Prescott, O.
McKenzie, Kenneth ..... Richmond, Q.
Mewburn, Frank H. ..... Drummondville, O.
Moore, W ..... Owen Sound, O.
Perks, W. C. ..... Port Hope, O.
Reynolds, T. W. ..... Brockville, O.
Rogers, E. J. ..... Peterboro, O.
Ross, James, B. A. ..... Dewittville, Q.
Ross, J. W. ..... Winthrop, O.
Serviss, T. W. ..... Iroquois, O.
Shanks, J. C. ..... Huntingdon, Q.
Shufelt, W. A. ..... Brome, Q.
Smith, E. H. ..... Montreal, Q.
Stephen, W. ..... Montreal, Q.
Struthers, A. D. ..... Philipsburg, Q.
Trueman, J. E. ..... Woodstock, N.B.
Wagner, G. C. ..... Dickinson's Landing, O.
Williams, J. ..... London, O.

Of the above named gentlemen W. Cormack is under age. He has, however, passed all the examinations, and fulfilled all the requirements necessary for graduation, and only awaits his majority to receive his degree.

Mr. H. A. Higginson, of L'Orignal, was unable on account of illness to present himself.

Messrs. James Ross, E. J. Laurin, K. McKenzie, and A. D. Struthers, natives of the Province of Quebec, have fulfilled all the requirements for graduation, but await the completion of four years from the date of passing the matriculation before receiving the degree.

The following have passed in Hygiene :—

E. C. Bangs,	W. T. Duncan,	A. J. Rutledge,
C. O. Browne,	W. H. Drummond,	C. Rutherford, M.A:
J. W. Cameron,	C. B. Hanvey,	Alex. Shaw,
Lorne Campbell,	R. J. B. Howard, B.A.,	H. W. Thornton, B.A.
A. M. Cattenach,	T. J. Pierce O'Brien,	W. E. Thompson,
Edmund Christie,		

The following have passed in Medical Jurisprudence :—

E. C. Bangs,
C. O. Brown,
J. W. Cameron,
A. M. Cattenach,
E. Christie,
Lorne Campbell,
W. H. Drummond,
R. Dawson, B.A.,
W. T. Duncan,
J. A. Grant, B.A.,
Hugh Gale,
B. F. W. Hurdman,
C. B. Hanvey,
R. H. Klock,
H. W. Thornton, B.A.
J. M. McLean,
T. Pierce O'Brien,
Henry O'Keefe,
H. V. Ogden, B.A.,
W. Prendergast,
A. P. Poaps,
Alex. Shaw,

The following have passed in Anatomy :—

W. G. Henry,
J. R. Johnson,
J. W. McLean,
O. Martel,
J. C. Meahan,
S. S. C. Phippen,
W. R. Ross,
E. S. Wood.

The following have passed in Practical Anatomy :—

W. G. Henry,
O. Martel,
J. C Meahan,
J. R. Johnson,
E. S. Wood.

The following have passed in Chemistry :—

J. Bennett, B.A.,
W. G. Henry,
J. R. Johnson,
J. W. McLean,
A. McLeod,
J. J. Maher,
O. Martel,
J. C. Meahan,
James Park,
S. S. C. Phippen,
S. F. Wilson, M.
L. D. Ross,
W. K. Ross,
J. M. Scott,
G. R. Sheriff,
W. A. Smith,
E. S. Wood.

The following have passed in Institutes of Medicine (Physiology and Pathology):—

W. A. Drummond,
W. G. Henry,
J. W. McLean,
J. J. Maher,
James Park,
S. S. C. Phippen,
W. K. Ross,
L. D. Ross,
W. A. Smith.

The following have passed in Materia Medica :—

J. Bennett,
J. J. Maher,
O. Martel.
J. C. Meahan,
L. D. Ross,
Arch. McLeod.

The following have passed in Botany :—

CLASS I.

G. A. Graham, } Equal—Prize.
E. Gooding, }
S. E. Brown,
W. Porteous,
Isaac M. McLean,
W. S. Renner,

F. D. Walker,
W. K. Ross,
D. A. Cameron,
J. A. Duncan, } Equal.
E. W. Smith, }
E. J. Elderkin,
T. B. Davies,
W. G. Johnston,
S. S. C. Phippen,
James L. Addison,
W. G. Henry.
J. R. McInerney,
T. O'Brien,
J. Menzies,
H. E. Smyth,
N. J. McDonald,

CLASS II.

J. McKenzie,
J. C. Sharp,
W. W. Doherty,
William Bell,
A. W. Haldimand,
J. H. Joliffe,
J. H. Landor,
A. McNeil,
J. C. Hutchison.

CLASS III.

J. W. McLean,
H. W. Allen,
C. H. Johnson,
J. H. B. Allan,
J. P. St. Germain,
J. A. Barrett,
G. H. Duncan,
William H. Klock.
W. Nelson,
E. H. Smith,
W. P. Bunnell,

XV.

MEDALS, PRIZES AND HONOURS.

THE HOLMES GOLD MEDAL FOR THE BEST EXAMINATION IN THE PRIMARY AND FINAL BRANCHES was awarded to James Ross, B.A., Dewittville, Q.

THE PRIZE FOR THE BEST FINAL EXAMINATION was awarded to John L. Ross, of Winthrop, Ont. The Gold Medallist is not permitted to compete for this prize.

THE PRIZE FOR THE BEST PRIMARY EXAMINATION was awarded to R. J. B. Howard, B.A., of Montreal.

THE SUTHERLAND GOLD MEDAL was awarded to C. E. Cameron, of Montreal.

The following gentlemen, arranged in the order of merit, deserve honourable mention :—

In the Final Examination, Messrs. Perks, Heyd, Laurin, Josephs, Grey, Shufelt and Rogers.

In the Primary Examination, C. E. Cameron, W. L. Lathern, W. McE. Scott, and J. J. Gardner.

Professors' Prizes.

Botany.—First Prize, G. A. Graham, of Hamilton, Ont., and F. Gooding, of Barbadoes, W. I., equal.

For the best Collection of Plants, J. C. McRae, of Port Colborne, O., and J. C. Meahan, of Bathurst, N.B., Equal.

Practical Anatomy.—Demonstrator's Prize, awarded to C. E. Cameron, of Montreal.

ORDER OF LECTURES,—FACULTY OF MEDICINE.

WINTER SESSION 1881-82.

A.M.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	Anatomy.	Anatomy.	Anatomy.	Anatomy.	Anatomy.	Hygiene.
	Medical Jurisprudence.		Medical Jurisprudence.		Medical Jurisprudence.	Botany.
10	Surgery.	Surgery.	Surgery.	Surgery.	Surgery.	
	Practical Chemistry.	Botany.	Practical Chemistry.	Botany.	Practical Chemistry.	Pathological Demonstration
11	Midwifery.	Midwifery.	Midwifery.	Midwifery.	Midwifery.	
	Out-door Patients. Montreal General Hospital.	Out-door Patients. Montreal General Hospital.	Out-door Patients. Montreal General Hospital.	Out-door Patients. Montreal General Hospital.	Out-door Patients. Montreal General Hospital.	
P.M. 12.45	Clinical Medicine, Wards.	Clinical Surgery, Wards.	Clinical Lecture, Surgery.	Clinical Surgery, Wards.	Clinical Medicine, Wards.	Clinical Lecture, Medicine.
1.45			Clinical Medicine, Wards.			Clinical Surgery, Wards.
2	Materia Medica.	Materia Medica.	Materia Medica.	Materia Medica.	Materia Medica.	Histological Demonstration 1st year.
3	Physiology.	Physiology.	Physiology.	Physiology.	General Pathology.	Physiological Demonstration, 2nd year.
4	Practice of Medicine.	Practice of Medicine.	Practice of Medicine.	Practice of Medicine.	Practice of Medicine.	
5	Chemistry.	Chemistry.	Chemistry.	Chemistry.	Chemistry.	
8.10	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.	

☞The Demonstrator's Hours in the Dissecting Room are from 10-12 a.m., 8-10 p.m.

☞Autopsies are performed at the General Hospital between 12 and 2 p.m. Due notice is given to the students.

Faculty of Law.

THE PRINCIPAL (Ex-officio.)

Professors:—LAFLAMME.
CARTER.
KERR.
TRENHOLME.
WURTELE.

Professors:—RAINVILLE.
ARCHIBALD.
LAREAU.
HUTCHINSON.
ROBIDOUX.

Lecturer:—HART.

Dean of Faculty.—Professor WM. H. KERR, Q.C., D.C.L.

Registrar of the Faculty.—J. S. ARCHIBALD, M.A., B.C.L.

Corporation Examiners for Degrees.—Professors N. W. TRENHOLME, M.A. B.C.L., and EDMOND LAREAU, B.C.L.

Matriculation Examiners of the Faculty.—Professors J. S. ARCHIBALD, M.A., B.C.L., and EDMOND LAREAU, B.C.L.

The Classes in Law will commence on Monday, the Third of October, 1881, and will extend to March 31st, 1882.

The Examinations will be held in the William Molson Hall, McGill College Building, from 4 to 6 p. m., on the 9th, 10th, 13th, 14th, 15th, 16th and 17th days of March, 1882.

The Lecture Rooms of the Faculty are situated in the Molson's Bank Chambers, in St. James street.

The complete course of study in this Faculty extends over three years; but it may be shortened to two years, when the student matriculates in the third year of his indentures.

Students who avail themselves of the privilege of attending two years only, will nevertheless be required to pass an examination in the subjects comprised in the three years' course.

Matriculated Students who do not take the whole course are classed as Partial Students, and are not entitled to proceed to the Degree of B.C.L.

Occasional Students will be received without matriculation, for attendance on any particular series of Lectures.

Students who have completed their course of three years,—or of two years, if they have commenced in the third year of their indentures,—and have passed a satisfactory examination, will be entitled, upon the certificate and recommendation of the Faculty, to the Degree of Bachelor of Civil Law.

COURSE OF STUDY.

FIRST YEAR.

Legal History	Professor LAREAU.
Civil Law :—	
Persons, Property, Ownership	Professor ROBIDOUX.
Roman Law :—	
Institutes of Justinian, B. I., Gaius, C. I., Maine, Chapters I. to IV	Professor TRENHOLME.
Civil and Commercial Law :—	
Obligations	Professor WURTELE.
Civil Procedure :—	
Introduction	Professor HUTCHINSON.
Criminal Law	Professor ARCHIBALD.
Notarial Course :	
Theory and Practice of Notarial Deeds and Proceedings	Lecturer HART.

SECOND YEAR.

Legal Bibliography, *Civil Law :—* Rents, Transaction, Suretyship	Professor LAREAU.
Civil Law :— Usufruct, Real Servitudes, Gifts and Wills, Substitutions	Professor ROBIDOUX.
International Law, *Civil and Commercial Law :—* Sales	Professor KERR.
Roman Law :— Institutes of Justinian, B. II. and B. III. to Title 14, Gaius, Chaps. II. and III., Maine, Chapters V. to VIII.	Professor TRENHOLME.

Commercial Law :—	
Partnership Corporations Bills of Exchange	Professor WURTELE.
Civil Procedure :—	
First Part	Professor HUTCHINSON.
Criminal Procedure and Election Law :—	Professor ARCHIBALD.
Notarial Course :—	
Theory and Practice of Notarial Deed and Proceedings	Lecturer HART.

THIRD YEAR.

Civil Law :—	
Privileges and Hypothecs Prescription Imprisonment in Civil Cases	Professor LAREAU.
Civil Law :—	
Successions Marriage Covenants Dower	Professor ROBIDOUX.
International Law *Commercial Law :—* Carriage of Persons Insurance Bottomry and Respondentia	Professor KERR.
Roman Law :— Institutes of Justinian, B. II. from Title 14.... Maine, Chapters IX. and X *Civil Law :—* Mandate Loan Deposit Pledge *Evidence*	Professor TRENHOLME.
Commercial Law :	
Merchant Shipping Affreightment Insolvency	Professor WURTELE.
Civil Procedure Second Part	Professor HUTCHINSON.
Criminal Procedure and Election Law	Professor ARCHIBALD.
Notarial Course :—	
Theory and Practice of Notarial Deeds and Proceedings	Lecturer HART.

FACULTY REGULATIONS.

1. Any person desirous of becoming a Matriculated Student, shall apply to the Dean of the Faculty for examination and entry in the Register of Matriculation, and shall procure a ticket of Matriculation and tickets of admission to the Lectures for each Session of the Course. (Students are requested to call on the Registrar, who will furnish them with the necessary forms.)

2. Candidates for Matriculation shall pass an examination, satisfactory to the Faculty of Law, in Latin, French, English, Mathematics, and Ancient and Modern History, and the books upon which such examination shall be had shall be from time to time fixed by the Faculty.

II. MATRICULATION IN THE FACULTY OF LAW.

The books at present prescribed are the following :—

Latin.—Virgil, Æneid, Book I. ; Cicero, Orations I. and II., against Catiline ; Latin Grammar.

French.—De Fivas' "Grammaire des Grammaires ;" *Molière, 'Le Bourgeois Gentilhomme ;' † Translation into French of Macaulay's Essay on Frederick the Great.

Exercises in composition and grammatical analysis, in English and French.

Mathematics.—Arithmetic ; Algebra to the end of simple equations ; Euclid, Books I., II., III.

History.—White's Outline of Universal History (or any equivalent manual), *Green's Short History of the English People ; Miles' School History of Canada ; † Duruy Histoire de France.

Literature.—* Collier's Biographical History of English Literature ; † Laharpe, Cours de Littérature ; † Lefranc, Cours de Littérature.

Rhetoric.—Whately's Rhetoric ; Blair's Lectures (small edition).

Philosophy.—*Whately's Logic ; † La Logique de Port Royal ; † Cousin, Histoire de la Philosophie ; * Stewart's Outline of Moral Philosophy.

N.B.—The works mentioned above preceded by an asterisk are for English students only. Those preceded by a cross are for French students only. The remainder are for both English and French.

---

3. Students in Law shall be known as of the First, Second and Third Years, and shall be so graded by the Faculty. In each year, Students shall take the studies fixed for that year and those only, unless by special permission of the Faculty.

4. The Register of Matriculation shall be closed on the 1st of November in each year, and return thereof shall be immediately made by the Dean to the Registrar of the University. Candidates applying thereafter may be admitted on a special examination to be determined by the Faculty ; and, if admitted, their names shall be returned in a supplementary list to the Registrar.

5. Persons desirous of entering as Occasional Students shall apply to the Dean of the Faculty for admission as such Students, and shall obtain a ticket, or tickets, for the class or classes they desire to attend.

6. Students who have attended Collegiate courses of study in other Universities for a number of terms or sessions, may be admitted, on the production of certificates, to a like standing in this University, after examination by the Faculty.

7. All Students shall be subject to the following regulations for attendance and conduct :—

(1) A class-book shall be kept by each Professor and Lecturer, in which the presence or absence of Students shall be carefully noted ; and the said class-book shall be submitted to the Faculty at a meeting to be held between the close of the lectures and the commencement of the examinations ; and the Faculty shall, after examination of such class-book, decide which students shall be deemed to have been sufficiently regular in their attendance to entitle them to proceed to the examination in the respective classes.

(2) Punctual attendance on all the classes proper to his year is required of each student. Professors will note the attendance immediately on the commencement of their lectures, and will omit the names of Students entering thereafter, unless satisfactory reasons are assigned. Absence or tardiness, without sufficient excuse, or inattention or disorder in the Class-room, if persisted in after admonition by the Professor, will be reported to the Dean of the Faculty, who may reprimand the student or report to the Faculty, as he may decide. While in the building, or going to or from it, students are expected to conduct themselves in the same orderly manner as in the Class rooms. Any Professor observing improper conduct in the Class-rooms, or elsewhere in the building, will admonish the student ; and, if necessary, report him to the Dean.

(3) When Students are reported to the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, disqualify from competing for prizes or honours, suspend from classes, or report to the Corporation for expulsion.

(4) Any Student injuring the furniture or building will be required to repair the same at his own expense, and will, in addition, be subject to such penalty as the Faculty may see fit to impose.

(5) The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session shall in each case be determined by the Faculty.

(6) All cases of discipline involving the interests of more than one Faculty, or of the University generally, shall be reported to the Principal, or, in his absence, to the Vice-Principal.

8. At the end of every Session there shall be a general examination of all the Classes, under the Superintendence of the Professors, and of such other Examiners as may be appointed by the Corporation, which examination shall be conducted by means of printed questions, answered by the students in writing, in the presence of the Examiners. The result shall be reported as early as pos-

sible to the Faculty, which shall decide the general standing of the students accordingly.

9. Each Professor shall deliver at least two Lectures in each week. Each Lecture shall be of one hour's duration ; but the Professors shall have the right from time to time to substitute an examination for any such Lectures.

10. No Student shall be considered as having kept a Session, unless he shall have attended regularly all the courses of Lectures, and shall have passed the Sessional Examinations to the satisfaction of the Faculty, in all the classes of his year.

11. The Faculty shall have the power, upon special and sufficient cause shown, to grant a dispensation to any Student from attendance on any particula Course or Courses of Lectures, but no distinction shall, in consequence, be made between the Examinations of such Students and those of the Students regularly attending Lectures. No Student shall pass for the degree of B. C. L. unless he has prepared a Thesis, either in French or English, which shall have been approved by the Faculty.

12. The subject of such Thesis shall be left to the choice of the Student, but it must fall within the range of study of the Faculty, and shall not exceed twenty pages of thirty lines each. Each Student shall on or before the first day of February forward such Thesis to the Registrar of the Faculty, marked with the *nom de plume* which he shall adopt, and accompanied with a sealed envelope, bearing the same *nom de plume* on it, and containing inside his name and the subject of his Thesis, and the envelope shall be opened in presence of the Faculty after the final decision shall be given on the respective merits of the several Theses.

13. The Elizabeth Torrance Gold Medal, in the Faculty of Law, shall be awarded to the Student who being of the Graduating Class, having passed the Final Examination, and having prepared a Thesis of sufficient merit in the estimation of the Faculty to entitle him to compete, shall take the highest marks in a special Examination for the medal, which examination shall include the subject of Roman Law.

14. Every Candidate before receiving the Degree of B. C. L. shall make the following declaration :

Ego A.B. polliceor, me, pro viribus meis, studiosum fore communis hujus Universitatis boni, operamque daturum ut decus ejus ac dignitatem amplificem, et officiis omnibus ad Baccalaureatus in Jure Civili gradum pertinentibus fungar

15. The fees exigible in this Faculty are as follows :

Matriculation Fee	$ 5 00
Sessional Fee by Ordinary Students	20 00
Sessional Fee by Occasional or Partial Students, for each course	5 00
Graduation Fee, including Diploma and Case	10 00
Additional fee for Notarial Students	10 00

Matriculation and Sessional Fees must be paid on or before Nov. 1st, and if not so paid the name of the Student shall be removed from the books, but may be

re-entered by consent of the Faculty, and on payment of a fine of not less than $3. Students already on the books of the University shall not be required to pay any Matriculation Fee.

16. The Course of Lectures upon the Theory and practice of Notarial deed and proceedings is optional to candidates for the profession of law but is compulsory upon candidates for the Notarial profession : the latter may omit the subject of civil procedure.

17. Notarial students shall rank for general standing upon their examinations in the notarial class, and failure to pass such examination shall have the same effec as failure in any other compulsory subject.

18. Occasional students may be admitted into said class on such terms as shall be arranged by the Faculty.

19. Every Candidate for the Degree of D.C.L. in Course, under Chap. VIII., Section 4, of the Statutes of the University, shall be required to pass within four years from his graduation as B.C.L., such examination as shall be prescribed by the regulations of the Faculty of Law ; unless he shall have graduated as a B.A. of this University, either in Course or *ad eundem*. And not less than two months before proceeding to the Degree of D.C.L., the Candidate shall deliver to the Faculty of Law twenty-five printed copies of a Thesis or Treatise upon a subject selected or approved by the Faculty ; such Thesis to contain not less than twenty-five octavo pages of printed matter, and possessing such a degree of literary and scientific merit as shall, in the opinion of the Faculty, justify them in recommending him for that Degree. And in addition to the foregoing qualifications, the Candidate shall pay to the Secretary of the Faculty annually during term, for the retention of his name on the books of the Faculty, during the said period of twelve years, a fee of two dollars, to be added to the Library fund of the Faculty.

Except as regards the Thesis, this regulation applies only to those who have taken the degree of B.C.L., subsequently to October, 1873. The examination under the above rule is as follows :—

(1) *International Law :—*

Phillimore ; Wharton, Conflict of Laws ; Fœlix, Droit International Privé.

(2) *Roman Law :—*

Gaii Commentarii, IV. ; Pauli Sententiæ ; Pomponii Fragmentum de origine juris D. 1. 2. ; Novellæ Justiniani, cxviii. cxxvii. ; Ortolan, Institutes de Justinien, Vol. I. ; Mommsen's History of Rome.

(3) *Constitutional Law :—*

Hallam, Constitutional History of England ; May, Constitutional History of England ; Mill, Representative Government ; The British North America Act, and cases thereunder.

(4) *Philosophy of Law :—*

Ahrens, Cours de Droit Naturel ; Austin, Jurisprudence ; Markby, Elements of Law ; Maine, Ancient Law.

(5) *Droit Civil et Commercial :—*

Pothier, Obligations, Vente et Communauté ; Marcadé, Obligations, Vente et Communauté ; Pardessus, Droit Commercial.

The Examination will be written and oral ; and translation from the Latin, French or English texts, as well as familiarity with the subject, will be required.

University School Examinations.

1882.

UNDER THE SUPERINTENDENCE OF McGILL UNIVERSITY, MONTREAL, AND THE UNIVERSITY OF BISHOP'S COLLEGE, LENNOXVILLE.

FOR CERTIFICATES OF THE UNIVERSITY AND THE TITLE OF ASSOCIATE IN ARTS.

These Examinations are held in Montreal and at Lennoxville, and local centres may be appointed elsewhere on application to the Principal of either University, accompanied with satisfactory guarantee for the payment of necessary expenses.

The Examinations are open to Boys or Girls, under 18 years of age, from any Canadian School, under the following regulations :

Subjects of Examination.

1. These are divided into two Classes, (I) *Preliminary*, consisting of those in which every Candidate must pass ; and (II) *Optional*, consisting of those in which the Candidate may have a choice.

2. The Preliminary subjects, with their values severally, are :—

English Reading	30	*Marks*
English Dictation	40	do
English Grammar (as in Morell or Smith)	50	do
Arithmetic (all the ordinary rules)	90	do
Geography (acquainted with the maps of each of the four Continents, and of British North America)	50	do
British History (as in Collier), and *Canadian History* (as in Jeffers)	50	do

The Candidates will also be examined in the Gospels, unless objection be made thereto by their parents or guardians, and creditable answering in the same will be mentioned in the Certificate.

Additional marks, not exceeding 20, may be allowed in the Dictation paper, for quality of handwriting.

No candidate can pass unless he shall have obtained at least *one-third* of the total number of marks in each of the above subjects, except Reading and Dictation, in which *two-thirds* will be required.

3. The Optional subjects are divided into three sections as follows :—

(1) Languages.

Latin.

Grammar. Cicero, Pro Archiâ. Virgil, Æneid, Bk. II. Ovid, Fasti, Vss. 1–300.	150 marks.

Greek.

Grammar. Xenophon, Anabasis, Bk. I. Homer Iliad, Bk. VI.	150 do

French.

Grammar. Extracts from Molière, in Darey's French Reader. Translation from English into French (Vicar of Wakefield, chaps. 1 and 2).	100 do

German.

Grammar, Adler's Reader, Section II. Translation from German into English.	100 do

(2) Mathematics, Natural Philosophy, &c.

Geometry.

Euclid, I, II, III	150 do

Algebra.

Elementary Rules, Involution, Evolution, Fractions, Simple Equations.	150 do

Plane Trigonometry.

Measurement of Angles, Trigonometrical Ratios of a single angle and of two angles, Complemental and Supplemental Angles, and the Solution of Right-angled Triangles.	100 do

Natural Philosophy.

Mechanics and Hydrostatics (as in any ordinary School Text-Book).	100 do
Geometrical and Freehand Drawing	100 do

(3) English.

The English Language.

Philology (as in Smith's or Mason's Grammar and Peile's Primer). Trench's Study of Words.	100 do

English Literature.

English Literature, Primer by S. A. Brooks Scott's Lady of the Lake. Milton's Paradise Lost, Books 1 and 2.	100 do

Additional Marks, not exceeding 50, may be allowed in the literature paper for quality of Composition.

History.—(As in Primers of Greece and Rome, and Collier's Great events) ..... 100 marks.
Geography.—Physical, Political and Commercial ..... 100 do

Instead of passing in one or more subjects of the English Section, Candidates may, if they prefer it, pass in one or more of the following subjects :—

(4) Natural Science.

Zoology (as in Nicholson's Introductory Text-Book) ..... 100 do
Botany (as in Gray's "How Plants Grow") ..... 100 do
Geology (as in Dana's Text Book) ..... 100 do
Chemistry (as in Miller's Introduction to Inorganic Chemistry) .. 100 do

General Regulations.

Every Candidate must pass in at least one, and not more than three, subjects in each of the Optional Sections.

No Candidate will be considered as having passed in any of the above Optional Subjects unless he has obtained *at least one-third* of the total number of Marks obtainable in that subject.

Any Candidate who passes in more than one subject of any section, and who in at least one of those subjects obtains *more than half* the total number of Marks, will be entitled to a Certificate of creditable answering in that subject.

The total number of Marks gained by every Candidate, including both Preliminary and Optional Subjects, shall be added up, and the Candidates arranged in a printed list, at the close of the Examination, in the order of these totals. No Marks in any subject shall be counted unless the Candidate has gained at least the minimum number of Marks in that subject.

Candidates passing in at least two languages of Section 1st, one of them being Latin or Greek, shall receive Senior certificates. Candidates passing in any one Language of Section 1st, may receive Junior certificates. Candidates who have fulfilled the requirements for the Junior certificate, and have also taken at least half the Marks in Arithmetic, Geometry, and Algebra, and have passed in Trigonometry and in one Natural Science subject, or in two Modern Lauguages, shall be entitled to Senior certificates.

Candidates taking Senior Certificates shall be termed Associates in Arts.

Every Candidate shall present a certificate of character, and also a certificate from his parent or guardian that his age on the first day of the examination does not exceed eighteen years.

In the case of those who pass in Latin, Greek, English, Algebra and Geometry, the examination will be received as the Matriculation Examination in the Faculties of Arts of the two Universities. In the case of those who have passed in Geometry, Algebra and English, the examination will be received for Matriculation in the Faculty of Applied Science of McGill University.

Candidates who fail, or who may be prevented by illness from completing

their examinations, may come up at the next examination without extra fee, unless in the interval they have become disqualified by age, this disqualification not to apply in cases of illness duly certified by medical authority.

The Examinations will be held in the following order :—

1. *Preliminary Subjects.*—(June 1.) Geography ; Gospels. (2) English Grammar ; Reading, Dictation ; (5) Arithmetic ; British and Canadian History.
2. *Optional Subjects.*—(June 6) Geometry ; French. (7) Latin, Natural Science. (8) Greek ; German. (9) English Literature ; History. (11) Algebra ; Natural Philosophy, Trigonometry. (12) English Language ; Geography.

Hours of Examination, 9 a.m. and 2 p.m.

Lists of the names, ages, and Optional Subjects to be taken by the candidates, together with the fee of $4, must be transmitted to the Secretary of McGill University on or before May 1st. (Blank forms and copies of the Regulations will be furnished on application.)

CLASSICAL SUBJECTS FOR 1883.

Latin :—

Cæsar, Gallic War, Bk. IV., ch. 20 to 36 ; Bk. V., ch. 8 to 23.
Cicero, pro Archiâ.
Virgil, Aeneid, Bk. V.

Greek :—

Xenophon, Anabasis, Bk. II.
Homer, Iliad, Bk. VI.

Regulations for the Higher Examination of Women.

Under the Superintendence of McGill University, Montreal, and the University of Bishop's College, Lennoxville.

Women over sixteen years of age, who have already received the Senior or Junior Certificates of the University, or who present certificates of education and examination accepted as equivalent by the Examiners, may enter on the following Examinations, and, on passing the same, shall be entitled to Certificates as Senior Associates in Arts.

The Examinations will be held at the same time and in the same manner with those for School Certificates, and local centres may be established on similar conditions.

The Examinations are divided into Imperative and Optional, as follows :—

I. IMPERATIVE.

These subjects consist of the following groups, in each of which every candidate will be required to take at least one-third of the number of marks.

(*a*) *Latin or Greek, with History.*

Latin and History.—

Tacitus :—Germania.
Cicero :—Pro Murena.
Virgil :—Æneid, Book VI.
Latin Prose Composition.—Text-book :—Dr. Smith's Principia Latina, Parts IV. and V.
History of Rome.—Text-book :—Liddell's History of Rome.

——200 marks.

Greek and History.—

Homer :—Odyssey, Book XII.
Xenophon :—Hellenics, Book I.
Lysias :—Contra Eratosthenem.
History of Greece.—Text- book :—Dr. Smith's History of Greece.

——200 marks.

Candidates may take either Greek or Latin.

(*b*) *Mathematics.*

Arithmetic.
Euclid, Bks. I. II. III. IV., Defs. of Bk. V., Bk. VI., omitting Props. 27, 28, 29.

Algebra, inclusive of Surds, Quadratic Equations and Progressions.
Plane Trigonometry, including the measurement of Heights and Distances, with the nature and use of Logarithms.

——200 marks.

(In the last subject, Candidates are referred to Galbraith and Haughton's Trigonometry, or similar text-books.)

(*c*) *Logic and English.*

Logic, as in Jevons, Elementary Lessons.
Anglo-Saxon, as in Earle's Manual.
Philology, as in the introduction to Earle's Philology.
English History, as in Collier.

——200 marks.

II. OPTIONAL.

In addition to the above, Candidates must pass in at least one, and not more than three, of the following subjects, creditable answering in which will be mentioned in their certificates :

(*a*) *Chemistry.*

Inorganic, as in Roscoe, with some knowledge of Chemical Manipulation.

(*b*) *Botany.*

As in Gray's Text-book, with some knowledge of Canadian Botany.

(*c*) *Mathematical Physics.*

Mechanics (Statics and Dynamics) ; Hydrostatics.
(Candidates are referred to Galbraith and Haughton's Mechanics and Hydrostatics, Hamblin Smith's Statics and Hydrostatics, or similar Text-books.)

(*d*) *Experimental Physics.*

Any two of the following :—Heat, Light, Electricity and Magnetism, Sound.
(Candidates will be expected to shew in the Examinations that they have made the experiments themselves or have seen them made. For range of study, Candidates are referred to Ganot's Elementary Treatise on Physics, translated by Atkinson.)

(*e*) *Biology and Geology.*

Classification of Animals and Plants, as in Dawson's Handbook and Gray's Text-book.
Geology, as in Dana's Manual.
Palæontology, as in Nicholson's Manual.
A practical knowledge of Minerals, Rocks and Fossils will be expected.

(*f*) *Mental Philosophy.*

Thomson's Outlines of the Laws of Thought.
Murray's Outline of Hamilton's Philosophy, Introduction and Part I. to the end of Chapter V.

(g) English Literature and Ancient History.

Chaucer—Prologue to Knight's Tale.

Shakspeare—Macbeth and Merchant of Venice.

Ancient History of the East—Lenormant and Chevallier.

History of Greece and Rome (if not taken in the Imperative), as in Smith and Liddell.

(h) French Language and Literature, with Ancient History.

French Syntax, as in De Fivas or Noel et Chapsal.

Molière, les Femmes savantes.

Racine, les Plaideurs.

Souvestre, un Philosophe sous les toits.

French Literature of the 17th and 18th centuries, as in Nisard, Précis de l'Histoire de la Littérature française.

Translation from English into French.

With History, as under *(g)*.

(i) German Language and Literature, with Ancient History.

General Questions on Grammar (Schmidt's German Guide, Parts 2 and 3).

Account of the Life and Principal Works of Goethe and Schiller, with a special study of Schiller's "Maria Stuart."

Adler's Progressive Reader, Nos. 5, 6, 8, 9, 12, 14 of Sec. IV.

Translation from English into German.

With History, as under *(g)*.

(k) Greek or Latin with History.

If not taken in the Imperative part of the Examination.

In the Optional Subjects, the Exam inations held under the Ladies' Educational Association of Montreal, when held by Professors or Examiners of either University, and certified in writing by them as equivalent to subjects stated above, may be accepted by the Examiners in any subject or portion of a subject.

In any of the Optional Subjects, Candidates must receive at least one-third of the marks in order to pass, and at least one-half to receive mention of creditable answering.

(It is understood that the Optional Subjects will be reckoned as approximately of equal value.)

Successful Candidates will be arranged in the lists in the order of the aggregate of the marks which they have obtained in the whole of the Imperative Subjects and one only of the Optional.

The Fee for the Examination is eight dollars, and must be paid before the Examination. In case of failure, the Candidate may come up at the next Examination without additional fee.

Candidates are required to state in writing to the Secretary of either University the Optional Subject or Subjects in which they propose to be examined, at least one month before the date of the Examination.

McGill Normal School.

1881-82.

GOVERNMENT OF THE SCHOOL.

Under the Regulations for the establishment of Normal Schools in the Province of Quebec, the Superintendent of Education is empowered to associate with himself, for the direction of one of these Schools, the Corporation of McGill University, Montreal. In accordance with this arrangement, the Provincial Protestant Normal School is affiliated with the McGill University, and the following members of the Corporation of the University constitute the Committee of the Normal School for the Session of 1881-82.

NORMAL SCHOOL COMMITTEE.

J. W. DAWSON, LL.D., F.R.S., C.M.G., Vice-Chancellor of the University, *Chairman.*

HON. JAMES FERRIER, Senator,
HON. F. W. TORRANCE, M.A., B.C.L., } Governors of McGill College.

REV. GEORGE CORNISH, LL.D.,
J. R. DOUGALL, M.A., } Fellows of McGill University.

WILLIAM CRAIG BAYNES, B.A., *Secretary.*

OFFICERS OF INSTRUCTION.

WILLIAM HENRY HICKS, ESQ.—*Principal and Ordinary Professor of English Language and Literature.*

JAMES MCGREGOR, LL.D.—*Ordinary Professor of Mathematics, and Instructor in Classics,*

SAMPSON PAUL ROBINS, LL.D.—*Associate Professor of Natural History.* (*)

PIERRE J. DAREY, M.A., B.C.L.—*Associate Professor of French.*

MR. HARRINGTON BIRD.—*Instructor in Drawing.*

* Prof. Robins will also deliver lectures on the Art of Teaching to the Elementary Class.

MR. R. J. FOWLER.—*Instructor in Music.*

MR. JOHN ANDREW—. " *in Elocution.*

J. BAKER EDWARDS, Ph.D.—*Lecturer on Chemistry and Natural Philosophy* †

FRANK W. HICKS, M.A.—*Assistant Professor of History and English Language and Literature.*

ANNOUNCEMENT FOR NEXT SESSION.

This Institution is intended to give a thorough training to teachers, especially for the Protestant population of the Province of Quebec. This end is attained by instruction and training in the Normal School itself, and by practice in the Model Schools; and the arrangements are of such a character as to afford the greatest possible facilities to Students from all parts of the Province.

The Twenty-fifth Session of this School will commence on the first of September, 1881, and will terminate on the first of July, 1882.

The complete course of Study extends over three years, and the Students are graded as follows :—

1. *Elementary School Class.*—Studying for the Elementary School Diploma.

2. *Model School Class.*—Studying for the Model School Diploma.

3. *Academy Class.*—Studying for the Academy Diploma.

---

1. *Conditions of admission and obtaining Diplomas.*

Candidates for admission into the Elementary School Class will be required to pass an examination in Reading, Writing, the Elements of Grammar, Arithmetic and Geography; and to produce the certificate, and sign the application, referred to in Articles 1 and 2 of the Regulations. Admission into each of the higher classes requires a knowledge of the subjects of the previous one.

Associates in Arts of the University may be admitted into the Elementary and Model School Classes without examination, provided that they have passed in Geometry, Algebra and French.

† Dr. Edwards will also lecture on Agricultural Chemistry.

In the Examinations for entrance into the Academy Class, the Principal may allow exemptions to Associates in Arts for such subjects as in the examinations for that certificate they may have passed in with credit.

Each Student must produce a certificate of good moral character from the clergyman or minister of religion under whose charge he has last been, and also testimony that he has attained the age of sixteen years. He will also be required to sign a pledge that he purposes to teach for three years in some Public School in the Province of Quebec.

There will be a Semi-sessional Examination at Christmas, which all Students are required to pass, in order to continue in the classes.

At the close of the first year of study, Students may apply for examination for diplomas giving the right to teach in Elementary Schools ; and after two years' study, or if found qualified at the close of the first year, they will, on examination, be entitled to diplomas as teachers of Model Schools.

Students having passed the examination for the Model School Diploma, with creditable marks in Classics and Mathematics, or having otherwise advanced to the requisite knowledge, may go on to the Academy Class, and, on examination, may obtain the Academy Diploma.

Students are expected to give their whole time and attention to the work of the School, and are not permitted to be occupied with any other course of study or business during the sessions of the School.

---

2. *Privileges of Students.*

On complying with the above conditions, all Students will be recognized as *Teachers-in-training;* and as such will be entitled to free tuition with the use of text books, and to bursaries in aid of their board, not exceeding $36.00 per annum in the case of those in the two first Classes, or $80.00 in the case of those in the Academy Class, should they be successful in obtaining the diploma at the final examination. A portion of this allowance will be advanced to such Students as are not resident in Montreal, on their passing the semi-sessional examination at Christmas.

Under the regulations subjoined, and with the view of extending the benefits of the School to all parts of the country, those who

reside at a distance of more than ninety miles from the city of Montreal will also be entitled to a small allowance for travelling expenses, proportionate to the distance.

Students resident in Montreal may share in the bursary fund, on producing certificates from their Ministers or clergymen that such aid is absolutely necessary to their continuing in attendance at the school.

In addition to religious instruction of a general Protestant character by the Professors, arrangements will be made for special religious instruction by ministers representing the several denominations with which the Students may be connected.

No boarding-house is attached to the institution, but every care will be taken to insure the comfort and good conduct of the Students in private boarding houses approved by the Principal. Board can be obtained at from $10 to $14 per month.

The Prince of Wales Medal and Prize will be given to the Student taking the highest place in the Model School Class, provided that such Student shall attain to the standard fixed by the Regulations of the Council of Public Instruction for this Medal.

The Marquis of Lorne Medal will be given to the Student taking the highest place in the Classical and Mathematical subjects of the Academy class, and passing creditably in the other subjects.

The J. C. Wilson Prize of $40 and a Book, contributed by him as a former Student of the School, will be offered for competition to the candidates for the Elementary Diploma, and will be given for the highest aggregate number of marks.

All the preceding regulations and privileges apply to female as well as to male students.

Persons holding the degree of B.A. or M.A. of any University in the Province of Quebec, may receive the Academy Diploma, on passing an examination in the art of teaching, and in such other subjects necessary to the Academy Diploma as may not have been included in their University Examinations.

3. *Course of Study.*

1. ELEMENTARY SCHOOL CLASS, STUDYING FOR THE ELEMENTARY SCHOOL DIPLOMA.

With the view of accommodating those who may be unable to enter at the commencement of the Session, or whose previous education may enable them to enter at a more advanced period, the course of study in this class is divided into terms, as follows :—

FIRST TERM, from September 1st to December 26th.

(*Entrance examination as stated above.*)

English.—Grammar and Composition; so far as to parse syntactically and write correctly a few short descriptive sentences; Text-Books : Bullion's Grammar and Parker's Progressive Lessons); Reading and Spelling, Etymology, Penmanship, Elocution.

Geography.—So far as to have a good acquaintance with the Map of the World.

History.—Outline of Sacred and Ancient History.—History of Canada. Text-Books, White and Hodgins.

Arithmetic.—Simple and Compound rules, Properties of Numbers, Scales o Notation. Text-Book : Sangster's Arithmetic.

Algebra.—The Elementary rules as in Todhunter's Algebra.

Geometry.—First Book of Euclid.

Art of Teaching.—The Physical, Mental and Moral Constitution of Children.

Physics.—The Chief Forces of Nature, Properties and States of Bodies, Solids, Liquids and Gases.

French.—Brachet's Elementary French Grammar, Easy reading and translation. Text-Books : Brachet's Elementary French Grammar; Darey, Lectures françaises, Dominion Phrase Book.

Natural History.—Botany as in Gray's Text-Book.

Drawing.—Elements and simple outlines.

Music.—Vocal Music with Part Songs.

SECOND TERM. January 1st to April 1st.

Pupils entering at the commencement of this term will be expected to pass a satisfactory examination in the subjects of the previous term.)

English.—Grammar and Composition, so far as to be able to analyse simple and complex sentences, and to write correctly a short essay on a familiar subject. —Elocution continued.

Geography.—So far as a good acquaintance with the physical features and political divisions of the great continents.

History.—England and France. Ancient History.

Arithmetic.—Vulgar Fractions. Proportion and Per-centage.

Algebra.—Simple Equations.

Geometry.—Second Book of Euclid.

Art of Teaching.—General Methods of Education.

Physics.—Motion. Vibration. Heat and Light.

French.—Grammar continued; including Reading, Translation, Oral and Written Exercises.

Natural History.—Continued.

Drawing.—Landscape, etc., in Pencil.

Music.—Elements of Vocal Music, and Part Songs.

THIRD TERM. April 1st to July 1st.

(Pupils entering at the commencement of this term will be expected to pass a satisfactory examination in the subjects of the previous terms.)

English.—Advanced Lessons, Grammar, and Composition, Elocution continued.

Geography and History.—Advanced Lessons, with use of Globes, and recapitulation of previous parts of the course.

Arithmetic.—As applied to Mensuration; and general recapitulation.

Algebra.—Simple Equations of two and three unknown quantities.

Geometry.—Recapitulation and Deductions.

Art of Teaching.—School arrangements.

French, Natural History, Physics, Drawing and Music.—Continued as in the previous term.

Religious Instruction will be given throughout the Session.

2. MODEL SCHOOL CLASS, STUDYING FOR THE MODEL SCHOOL DIPLOMA.

(Students entering this Class must have passed a satisfactory examination in the subjects of the Elementary School Class. The Class will pursue its studies throughout the Session, without any definite division into terms.).

English.—Principles of Grammar and Composition, Style. History of the English Language. Lectures on English Literature. Elocution.

Geography. — Mathematical. Detailed course of Political and Physical Geography.

History.—Mediæval and Modern, with special reference to the History of Literature, Science and Art, and Colonization and Commerce.

Education.—Advanced course of Lectures on Educational Subjects.

Arithmetic.—Logarithmic, Algebraic and Geometric Arithmetic. Recapitulation of Commercial Arithmetic and Book-keeping.

Algebra.—Quadratic Equations. Ratios and Progression.

Geometry.—Third, Fourth and Sixth Books of Euclid. Application to Mensuration.

Object Lessons.

Chemistry and Natural Philosophy.—Affinity, Laws of Combination, Principal groups of Salts, Electricity and Electrolysis, Mechanical Physics.

Classics.—Elements of the Latin Language, as in Bryce's 1st Latin Reader.

French.—Brachet's Elementary French Grammar. Translation from French into English, and from English into French ; Darey, Lectures françaises, Dominion Phrase Book.

Agricultural Chemistry.—Principles, and application to Canadian Agriculture.

Drawing.—Figures from the Flat and from Models. Elements of Perspective.

Music.—Instrumental Music, Part Songs, and Rudiments of Harmony.

Religious Instruction throughout the Session.

---

3. ACADEMY CLASS, STUDYING FOR THE ACADEMY DIPLOMA.

(Students entering this Class must have passed a creditable examination in the subjects preparatory to the Course of Study.)

English Literature.—An advanced course.

History and Geography.

Logic and Ethics.—As in Abercrombie's Intellectual and Moral Philosophy.

Mathematics.—Trigonometry. Solid Geometry and Mechanics :—Galbraith and Haughton.

Latin.—Sallust, Catiline ; Virgil, Æneid, Book VI. ; Latin Prose Composition, Roman History.

Greek.—New Testament, John's Gospel ; Xenophon, Anabasis B. I. ; Grammar and History.

French.—As in the Model School class.

Elocution.

Drawing.

Education and object Lessons. In the case of students who have not already attended the lectures in these subjects.

EXTRACTS FROM THE REGULATIONS.

Special Regulations for the admission of Teachers-in-training.

Article First.—Any person desirous of being admitted as a Teacher-in-training, must apply to the Principal of the Normal School, who, on his producing an extract from the Register of Baptisms, or other evidence, showing that he is full sixteen years of age, with the certificate of character and conduct required by the 6th article of the General Rules and Regulations, approved by His Excellency the Governor-General in Council, on the 22nd December, 1856, shall examine the candidate.

If upon his examination it is found that the candidate can read and write sufficiently well, knows the Rudiments of Grammar in his mother tongue, Arithmetic as far as the rule of three inclusively, and has some knowledge of Geography, the Principal shall grant him a certificate.

Article Second.—The candidate having thus obtained the certificate of the Principal, shall then (in the presence of two witnesses, who, with the Principal, shall countersign the same) sign an application in writing for admission, containing the declaration required by the 23rd general regulation. This shall be forwarded to the Superintendent of Education, together with all the certificates and other documents required, and if the whole be found correct, the Superintendent shall cause the name of the candidate to be inscribed in the Register, and notice thereof shall be given to the Principal.

Article Third.—The Teachers-in-training shall state the place of their residence ; and those who cannot reside with their parents will be permitted to live in boarding-houses, but in such only as shall be specially approved of. No

boarding-houses having permission to board male Teachers-in-training will be permitted to receive female Teachers-in-training as boarders, and *vice versa*.

Article Fourth.—Every Teacher-in-training, on passing the examination, will be allowed a sum not exceeding $36 to assist in paying his board. (*)

Article Fifth.—Every Teacher-in-training residing at a distance of more than ninety miles from the City of Montreal, shall be entitled to receive an allowance for travelling expenses proportionate to the distance, but not to exceed ten dollars *per annum*.

Article Sixth.—The total amount of allowances paid to Teachers-in-training under the foregoing articles shall not exceed $1,333.33 currency, yearly—that being the sum granted for that object; and when the whole of this amount is appropriated, such Teachers-in-training as may apply for admission shall not be entitled to any portion thereof until vacancies shall occur.

Special Regulations for Government and Discipline.

Article First.—Teachers-in-training guilty of drunkenness, of frequenting taverns, of entering disorderly houses or gambling houses, or keeping company with disorderly persons, or committing any act of immorality or insubordination, shall be expelled.

Article Second.—There shall be no intercourse between the male and female Teachers-in-training while in School, or when going to, or returning from it. Teachers of one sex are strictly prohibited from visiting those of the other.

Article Third.—They are on no account to be absent from their lodgings after half-past nine o'clock in the evening.

Article Fourth.—They will be allowed to attend such lectures and public meetings only as may be considered by the Principal conducive to their moral and mental improvement.

Article Fifth.—Proprietors of boarding-houses authorized by the Principal shall report to him any infraction of the rules with which they may have become acquainted.

Article Sixth.—The Professors shall have the power of excluding from the lectures for a time, any student who may be inattentive to his studies, or guilty of any minor infraction of the regulations.

Article Seventh.—Teachers-in-training will be required to state with what religious denomination they are connected; and a list of the Students connected with each denomination shall be furnished to one of the Ministers of such denomination resident in Montreal, with request that he will meet weekly with that portion of the Teachers-in-training, or otherwise provide for their religious instruction. Every Thursday after four o'clock will be assigned for this purpose.

Article Eighth.—In addition to punctual attendance at weekly religious in-

* Except in the case of Teachers-in-training for the Academy Diploma, who may receive a sum not exceeding $80.

struction, each Student will be required to attend public worship at his own church, at least every Sunday.

Intending Students may obtain all necessary information on application to the Principal or either of the Professors.

MODEL SCHOOLS OF McGILL NORMAL SCHOOL.

Head Teacher of Boys' School—Frank W. Hicks, M.A.
" " Girls' School—Jane A. Swallow.
" " Primary School—Lucy H. Derick.

These Schools can accommodate about 300 pupils, are supplied with the best furniture and apparatus, and conducted on the most modern methods of teaching. They receive pupils from the age of six and upwards, and give a thorough English Educatiom. Fees Boys' and Girls' Model Schools, 25c. to 40c. per week ; Primary School, 20c. ; payable weekly.

Time Table of McGill Normal School.

SESSION 1881–82.

ELEMENTARY SCHOOL CLASS.

Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9		Arithmetic.		Arithmetic.		Elocution.
10	Model School.	Algebra & Geometry.	Model School.	Algebra.	Model School.	Drawing.
11	Gymnastics.	Writing.		Geometry.	Gymnastics.	Singing.
1	Geography.	Model School.	Geography.		Grammar.	
2	French.	Elocution.	English Literature.	Model School.	French.	
3	History.	Nat. Philosophy.	French.	Elocution.	Art of Teaching.	
4	Botany.		Composition.	Religious Instruction.	History.	

MODEL SCHOOL CLASS.

9	Arithmetic.		Algebra.		Geometry.	Drawing.
10	Latin.	Model School.	Latin.	Model School.	Arith. & Algebra.	Elocution.
11	English Literature.		Singing.			Singing.
1	Chemistry.	Education.		Agricultural Chem'y.	Model School.	
2	Elocution.	Grammar.	French.	Geography.	2½ Elocution.	
3	French.	History.	Object Lessons.	Composition.	3 French.	
4				Religious Instruction.		

ACADEMY CLASS.

9		Model School.				Drawing.
10				Model School.		Elocution.
11	Latin.	Greek.	Latin.	Greek.	Latin.	Practical Chem'y.
1	Mathematics.	Geography.	Mathematics.		Latin.	
2	Elocution.	History.			Mental Philosophy.	
3	French.		Object Lessons.	Composition.	French.	
4				Religious Instruction.		

Passed the University Examinations.

SESSION 1880-1881.

FACULTY OF LAW.

PASSED FOR THE DEGREE OF B.C.L.

Allan R. Oughtred.
Alexander Cross, B.A.
Campbell Lane, B.A.
Donald Downie.
Robert C. Smith.
Edmund M. McMahon.
Paul R. Sjostrom.
Charles Raynes, B.A.
Allan G. Ingalls.
Edmund W. P. Guerin, B.A.
Hon. Henry Aylmer.*
Wm. A. Polette.
S. W. Jackson.
William D. Lighthall, B.A.
William A. Weir.
Alexander C. Rutherford.
Joseph L. Forster.
James Shortiss.
Alphonse L. de Martigny.
Antoine A. Gautier.
George S. Foster.*
James Wm. Brakenridget
Herbert S. Hunter.†

* Degree granted but not conferred.

†Degree granted 1880, conferred 1881.

GRADUATES WHO PASSED IN THE NOTARIAL CLASS.

Albert C. Lyman, B.A.
William W. Redpath, B.A.

PASSED THE EXAMINATIONS FOR D.C.L., REQUIRED BY REGULATION 16TH, FACULTY OF LAW, 1879.

THOMAS NICHOL, M.D., LL.B., B.C.L.

FACULTY OF MEDICINE.

PASSED FOR THE DEGREE OF M.D., C.M.

(Arranged Alphabetically.)

Bonesteel, S. A.
Brown, T. L.
Cameron, Paul.
Carson, J. H.
Cormack, W.
Feader, H. C.
Fraser, H. D.
Fielde, E. C.
Grey, W. L.
Gordon, C. M.
Harvie, J. B.
Heyd, H. E.
Higginson, H. A.
Houston, D. W.
Hunt, J. J.
Josephs, G. E.
Lang, W. A.
Laurin, E. J.
Lunam, Henry, B.A.
Macdonald, R. T.

McGannon, E. A.
McKenzie, Kenneth.
Mewburn, Frank H.
Moore, W.
Perks, W. C.
Reynolds, T. W.
Rogers, E. J.
Ross, James, B.A.
Ross, J. W.
Serviss, T. W.
Shanks, J C.
Shufelt, W. A.
Smith, E. H.
Stephen, W.
Struthers, A. D.
Trueman, J. E., B.A.
Wagner, G. C.
Williams, J.

PASSED THE PRIMARY EXAMINATIONS.

Allen, Clarence E.
Bangs, Edson C.
Bonesteel, S. A.
Bowser, James C.
Brown, C. O.
Cameron, C. E.
Cameron, J. W.
Cattenach, Angus M.
Clarke, H. J.
Cousins, W. C.
Derby, W. J.
Deardan, George A.
Gardner, J. J.
Grant, James A., B.A.
Gray, James.
Hanvey, Chas. B. H
Hopkins, Joseph A.
Harrisson, J. H.
Howard, Robt. J. B., B.A.
Jack, W. D. Brydone, B.A.
Kelly, P. N.
Lathern, John S.
Loring, J. B.
McCorkill, Robert K.
Musgrove, Wm. J.
Muckey, Floyd S.
O'Brien, T. Pierce.
Page, T. A.
Poaps, Allen P.
Rutledge, And. J.
Rutherford, Clarendon, M.A.
Scott, Walter McE.
Sihler, George A.
Smith, E. W., B.A.
Stewart, Andrew.
Thompson, W. E.

FACULTY OF ARTS.

PASSED FOR THE DEGREE OF B. A.

In Honours.

(Alphabetically arranged.)

First Rank.—Elder, John.
Falconer, Alexander.
Ferguson, William A.
McKenzie, William A.
Macpherson, Kenneth R.
Tucker, John W.

Second Rank.—Bracq, John C.
Lyman, Walter E.
Reid, James.

Ordinary.

(In order of Merit.)

(1) *McGill College.*

Class I.—White, William T.

Class II.—Weeks, William A.
McLeod, Archibald.
McDonald, Hector C. } equal.
Rutherford, Alexander, B.C.L. }
Robertson, George.

Class III.—Gamble, Robert.
Black, Charles.
McIntyre, Hector A.
McNabb, Robert.

(2) *Morrin College.*

Class I.—Duclos, Charles A.
Class II.—Pritchard, John G.

PASSED THE INTERMEDIATE EXAMINATION.

(1) *McGill College.*

Class I.—Bland, Murray, Lee, Dixon, Bowers.
Class II.—Cameron, Griffith, Greenshields, Shearer, England, Gardner, Hunter, Ross, Kinnear, Fraser, Gairdner.
Class III.—Marceau, O'Halloran, Porter, Ferguson.

(2) *Morrin College.*

Class II.—Ross.

(3) *St. Francis College.*

Class II.—Mackie, Dickson.
Class III.—McLeod.

BACHELORS OF ARTS PROCEEDING TO THE DEGREE OF M. A. IN COURSE.

A. Clarence Lyman, B.A.
Rev. J. Fielding Sweeny, B.A.

MASTER OF ARTS PROCEEDING TO THE DEGREE OF LL.D. IN COURSE.

Rev. Archibald Duff, M.A.

ADMITTED "AD EUNDEM GRADUM."

Fred. S. Haight, M.A., Williams College, Massachusetts, U.S.
S. H. Parsons, B.A., University of New Brunswick.

FACULTY OF APPLIED SCIENCE.

GRADUATING CLASS.

PASSED THE EXAMINATION FOR THE DEGREE OF BACHELOR OF APPLIED SCIENCE.

Civil Engineering.

HENRY A. ARCHBALD, ROBERT WILLIAM WADDELL, LOUIS NAPOLEON RICHARD.

SCHOLARSHIPS AND EXHIBITIONS.

SESSION 1880–81.

I. SCHOLARSHIPS (Tenable for two years).

Year of C'cement.	Name of Scholar.	Subject of Examination.	Annual Value.	Founder or Donor
1879	Ferguson (W. A.)	Mathematics	$125	W C. MacDonld.
1879	Ami, Henry M.	Natural Science	$125	" "
1879	Falconer, Alex.	Class & Mod Lang	$125	" "
1879	Tucker, John W.	Class & Mod Lang	$125	" "
1880	Hague, Henry J.	Class & Mod Lang	$125	" "
1880	Gregor, Leigh R.	Class & Mod Lang	$125	" "
1880	Lafleur, Henri A.	Natural Science	$125	" "

II. EXHIBITIONS (Tenable for one year.

Name of Exhibitioner.	Academic Year.	Annual Value.	Founder or Donor.
Jones, John E.	Third Year	$100*	Principal Dawson.
Lee, Archibald	Second Year	$125	W. C. MacDonald.
Bland, Charles E.	Second "	$100	Mrs. Jane Redpath.
MacKay, Adams A.	First "	$125	W. C. MacDonald.
Unsworth, Joseph K.	" "	$125	W. C. MacDonald.
Cameron Kenneth	" "	$100	Governors.

* Awarded to the candidate second in order of merit at the Natural Science Scholarship Examination, September, 1880.

Prizes, Honours and Standing.

SESSION 1880-81.

FACULTY OF LAW.

GRADUATING CLASS.

ELIZABETH TORRANCE MEDAL.—ALLAN R. OUGHTRED.

ELIZABETH TORRANCE PRIZE.—ALEX. CROSS.

Prizes for best Thesis.—WM. A. POLETTE CAMPBELL, LANE, equal.

Passed with First Rank Honours.—OUGHTRED, CROSS, LANE, DOWNIE, SMITH, MCMAHON, SJOSTROM.

Second Rank Honours.—RAYNES, LYMAN, INGALLS, GUERIN, AYLMER.

Standing in the Several Classes.

INTERNATIONAL LAW.—PROFESSOR KERR.
First, A. R. OUGHTRED.
Second, CHARLES RAYNES.

In the special competition in this subject for the Professor's prize Mr. E. P. Guerin was successful.

ROMAN LAW.—PROFESSOR TRENHOLME.
First, CROSS, OUGHTRED and SMITH, equal.
Second, GUERIN and RUTHERFORD, equal.

COMMERCIAL LAW.—PROFESSOR WURTELE.
First, DOWNIE, OUGHTRED and LANE, equal.
Second, CROSS and SJOSTROM, equal.

CRIMINAL PROCEDURE.—PROFESSOR ARCHIBALD.
First, SJOSTROM.
Second, OUGHTRED.

LEGAL HISTORY.—PROFESSOR LAREAU.
First, GUERIN and SMITH, equal.
Second, OUGHTRED.

CIVIL PROCEDURE.—Professor Hutchinson.
First, Cross.
Second, Downie and Sjostrom, equal.

CIVIL LAW.—Professor Robidoux.—
First, Polette.
Second, Raynes and Lane, equal.

SECOND YEAR.

Prize for General Proficiency.—Toussaint Z. Lefebvre.

Second Prize.—James Crankshaw.

Honours of Second Rank.—Lefebvre, Crankshaw, Goldstein.

Passed the Sessional Examinations.—Toussaint Z. Lefebvre, James Crankshaw, Maxwell Goldstein, Hector C. McDonald, Frank Weir, George A. Brooke, Ezra F. Hipple, Edward A. D. Morgan, William J. White, Alfred L. Guertin, William J. Joliffe, Alfred C. Girard, Robert A. Klock, Archibald E. Bernard, Pierre N. Renaud, William H. Cross, George R. Lighthall.

Standing in the Several Classes.

INTERNATIONAL LAW.—Professor Kerr.
First, Brooke.
Second, Morgan.

ROMAN LAW.—Professor Trenholme.
First, Weir.
Second, Lefebvre and Goldstein, equal.

COMMERCIAL LAW.—Professor Wurtele.
First, McDonald.
Second, Hipple.

CRIMINAL PROCEDURE.—Professor Archibald.
First, Brooke.
Second, Crankshaw and Guertin, equal.

LEGAL HISTORY.—Professor Lareau.
First, Cross.
Second, Girard.

CIVIL PROCEDURE.—Professor Hutchison.
First, Lefebvre.
Second, McDonald.

CIVIL LAW.—Professor Robidoux.
First, Goldstein and Lefebvre.
Second, Hipple.

FIRST YEAR.

Prize for General Proficiency.—JOHN E. MARTIN.

Second Prize.—JOHN FAIR.

Honours of First Rank.—MARTIN, FAIR.

Honours of Second Rank.—HAGUE, CAMPBELL, HUTCHINS, LEET.

Passed the Sessional Examinations.—JOHN E. MARTIN, JOHN FAIR, Jr., FREDERICK HAGUE, ROBERT M. CAMPBELL, HORACE A. HUTCHINS, LYNN T. LEET, WILLIAM E. DICKSON, WALTER HUNTER, ARTHUR McCONNELL, WILLIAM H. BURROUGHS, HENRY TUCKER, ARTHUR H. CHAMBERS, PETER S. G. McKENZIE, EDWARD W. H. PHILLIPS, HUGH A. BAIN, CHARLES S. ROY, JEAN B. DEMERS.

Standing in the Several Classes.

ROMAN LAW.—PROFESSOR TRENHOLME.
First, FAIR and MARTIN, equal.
Second, HUNTER.

COMMERCIAL LAW.—PROFESSOR WURTELE.
First, FAIR.
Second, PHILLIPS and CAMPBELL, equal.

CRIMINAL LAW.—PROFESSOR ARCHIBALD.
First, MARTIN.
Second, FAIR.

LEGAL BIBLIOGRAPHY.—PROFESSOR LAREAU.
First, MARTIN.
Second, FAIR.

CIVIL PROCEDURE.—PROFESSOR HUTCHINSON.
First, HAGUE and MARTIN, equal.
Second, CAMPBELL and FAIR, equal.

CIVIL LAW.—PROFESSOR ROBIDOUX.
First, MARTIN.
Second, FAIR.

FACULTY OF MEDICINE.

HOLMES GOLD MEDAL.—JAMES ROSS, B.A., of Dewittville, Q.
The Prize for the Final Examination.—JOHN L. ROSS, of Winthrop, Ontario.
The Prize for the Primary Examination.—R. J. B. HOWARD, B. A., of Montreal.
The Sutherland Gold Medal.—C. E. CAMERON, of Montreal.

Students deserving Honorable Mention.

In the Final Examination, Messrs. PERKS, HEYD, LAURIN, JOSEPHS, GREY, SHUFELT and ROGERS.
In the Primary Examination, C. E. CAMERON, W. L. LATHERN, W. McE. SCOTT and J. J. GARDNER.

Professors' Prizes.

BOTANY.—First Prize, G. A. GRAHAM, of Hamilton, Ont., and E. GOODING, of Barbadoes, W. I., equal.

FOR THE BEST COLLECTION OF PLANTS, J. C. McRAE, of Port Colborne, O., J. C. MEAHAN, of Bathurst, N. B.

PRACTICAL ANATOMY.—Demonstrator's Prize awarded to C. E. CAMERON, of Montreal.

FACULTY OF ARTS.

GRADUATING CLASS.

B. A. Honours in Mathematics and Natural Philosophy.

FERGUSON, WILLIAM A.—First Rank Honours and Anne Molson Gold Medal.

B. A. Honours in Classics.

TUCKER, JOHN W.—First Rank Honours and Henry Chapman Gold Medal.
McKENZIE, WILLIAM A.—First Rank Honours.

B. A. Honours in Natural Science.

MACPHERSON, KENNETH R.—First Rank Honours and Logan Gold Medal.

B. A. Honours in Mental and Moral Philosophy.

ELDER, JOHN.—First Rank Honours and Prince of Wales Gold Medal.
REID, JAMES.—Second Rank Honours.
BRACQ, CHARLEMAIN.—Second Rank Honours.

B. A. Honours in English Language, Literature and History.

FALCONER, ALEXANDER.—First Rank Honours and Shakespeare Gold Medal.

B. A. Honours in Modern Languages and Literature with History.

LYMAN, WALTER E.—Second Rank Honours.

Special Certificates for B. A. Ordinary.

WHITE, WILLIAM J.—*McGill College*—First Class.
DUCLOS, CHARLES A.—*Morrin College*.—First Class.

THIRD YEAR.

ROGERS, JOHN H.—First Rank Honours in Mental and Moral Philosophy and Prize; First Rank General Standing; Prize in Classics; Prize in Rhetoric.

TRENHOLME, CHAS. W.—First Rank Honours in Natural Science; First Rank General Standing; Prize in Zoology.

HAGUE, HENRY J.—First Rank Honours in Classics; First Rank Honours in Mental and Moral Philosophy; Prize in Classics; Prize in Moral Philosophy.

SMITH, ARTHUR W.—First Rank Honours in Natural Science.

LAFLEUR, HENRI.—First Rank Honours in Natural Science; Prize in Classics.

MORIN, JOS. L.—First Rank Honours in Modern Languages (French and Spanish) and History.

RIELLE, NORMAN J.—Second Rank Honours in English Literature: Prize in Classics; Prize in Moral Philosophy.

GREGOR, LEIGH R.—Second Rank Honours in Mental and Moral Philosophy.

WHILLANS, GEORGE.—Second Rank Honours in Mental and Moral Philosophy.

PASSED THE SESSIONAL EXAMINATION.

Rogers, Trenholme, Rielle, Lafleur, Hague, Gregor, Smith (A. W.), Barron, Mackay (D.), McKillop, Whillans, Cockfield, Stewart, Walker, Morin, Thomas, Martin.

SECOND YEAR.

MURRAY, J. RALPH.—(Kingstown School, Ireland.)—First Rank Honours in Mathematics and Prize; First Class General Standing; Prize in Logic.

BLAND, CHAS. E.—(High School, Montreal.)—First Rank General Standing; Prize in French.

LEE, ARCHIBALD.—(Private Tuition.)—First Rank General Standing.

DIXON, WELLINGTON.—(Prince of Wales College, Charlottetown, P.E.I.)—First Rank General Standing; Prize in English.

BOWERS, ALFRED A.—The Stewart Prize in Hebrew; First Rank General Standing; Prize in Botany.

KINNEAR, GEORGE.—(St. Francis College, Richmond.)—Prize in Hebrew.

PASSED THE SESSIONAL EXAMINATIONS.

Bland, Murray (J.R.), Lee, Dixon, Bowers, Cameron, Griffith, Greenshields, Shearer, England, Gardner (A.), Hunter, Ross, Kinnear, Fraser, Gairdner (T.), Marceau, O'Halloran, Porter, Ferguson (C. F.).

FIRST YEAR.

MACKAY, ADAMS A.—(Pictou Academy, N. S.)—First Rank Honours and Prize in Mathematics; First Rank General Standing; Prize in Classics; Prize in Ancient History; Prize in English.

UNSWORTH, Jos. K.—(Brampton High School, Ontario.)—First Rank General Standing; Prize in Classics.

BLACKADER, EDWARD H.—(High School, Montreal.)—First Rank General Standing; Prize in Classics.

MASSÉ, GODEFROI.—(Grande Ligne Mission.)—First Rank General Standing.

WRIGHT, GEORGE C.—(Ottawa Collegiate Institute.)—Prize in Chemistry.

RONDEAU, SAMUEL.—(McGill Normal School.)—Prize in French.

ROGERS, GEORGE.—(Private Tuition.)—Prize in Hebrew.

PASSED THE SESSIONAL EXAMINATIONS.

Mackay (A. A.), Unsworth, Blackader, Massé, Mabon, Wright, Kennedy, Rondeau, Christie, Kirkpatrick, Gerrie, Turner, Kinghorn; Colquhoun and Rogers, equal; Duclos, Pedley, Cameron, Larivière.

At the Examinations in September, 1880, the following *Scholarships* and *Exhibitions* were awarded :—

THIRD YEAR.—Lafleur (H. A.) and Hague, *W. C. McDonald Scholarships*, each $125 annual value; Gregor :—the Charles Alexander Scholarship, $120 annual value; Jones, John E.) :—Principal Dawson Exhibition, $100 annual value.

SECOND YEAR.—Lee (Arch'd) :—*W. C. McDonald Exhibition*, $125 annual value; Bland :—The Jane Redpath Exhibition, $100 annual value.

FIRST YEAR.—Mackay and Unsworth and Blackader :—*W. C. McDonald Exhibitions*, each $125 annual value; Mabon :—*The Governors' Exhibition*, $100 annual value.

CHRISTMAS EXAMINATIONS, 1880.

GREEK.

THIRD YEAR.—*Class I.*—Hague; Lafleur and Rielle, equal; Rogers and Trenholme, equal; Whillans, Gregor, Jones. *Class II.*—Parent; Morin and Mackay (Dan.), equal; Stirling, Martin, Smith; Cockfield and Stewart, equal; Walker, Barron. *Class III.*—McKillop, Lawford· Thomas, *aeger*.

SECOND YEAR.—*Class I.*—Lee; Bland and Dixon, equal; Griffith and Murray and Porter, equal; Shearer, Greenshields, Cameron (J.D.); Ross (L.F.) and Gardner, equal; England, Bowers. *Class II.*—Ferguson (Chas. F.) and Fraser, equal; Brown, Hunter, Gairdner, Barlow, Kinloch, Morris, *Class III.*—O'Halloran, Kinnear; Marceau and Richardson, equal; Blanchard.

FIRST YEAR.—*Class I.*—Unsworth, Blackader, Mackay (Adams A.), Mabon. *Class II.*—Rondeau, Massé, Christie; Kinghorn and Wright, equal Larivière (Dol). *Class III.*—Turner, Cameron (K.); Kirkpatrick and Rogers (Geo.), equal; Kennedy; Boyd and Carmichael and Duclos, equal; Joseph and Shipperley, equal; Currie, Gibson.

LATIN.

THIRD YEAR.—*Class I.*—Lafleur, Hague, Trenholme; Jones and Rielle, equal; Rogers, Gregor, Whillans. *Class II.*—Cockfield; Barron and Parent equal; Martin and Stirling, equal; Morin, Thomas and Walker, equal. McKillop, Stewart, Mackay (Daniel), Smith (A. W.), Lawford. *Class III.*—None.

SECOND YEAR.—*Class I.*—Porter; Bland and Cameron and Dixon and Griffith, equal; Gardner, Murray, Lee; Ross (L. F.) and Shearer, equal. *Class II.*—Greenshields and O'Halloran, equal; Brown and England and Morris, equal; Blanchard and Bowers, equal; Fraser and Gairdner, equal; Hunter, Ferguson (C. F.), Barlow. *Class III.*—Kinloch, Richardson, Kinnear, Marceau.

FIRST YEAR.—*Class I.*—Blackader, Mabon; Mackay (A.) and Unsworth, equal; Christie, Rondeau. *Class II.*—Massé, Kennedy, Wright, Turner, Kirkpatrick, Kinghorn; Cameron (K.) and Murchison, equal. *Class III.*—Boyd; Joseph and Currie and Duclos, equal; Carmichael, Larivière (Dolard), Rogers, Gibson.

ENGLISH LITERATURE.

FOURTH YEAR.—*Class I.*—Falconer, Weir. *Class II.*—McDonald and Reid, equal; Rutherford and White, equal; McLeod and Gamble, equal. *Class III.*—Ferguson, Black.

SECOND YEAR.—(*Optional*).—*Class I.*—Lee. *Class II.*—None. *Class III.*—Ferguson (C. F.).

ENGLISH LANGUAGE AND LITERATURE.

FIRST YEAR.—*Class I.*—Mackay, Boyd; Colquhoun and Kennedy, equal; Wright, Unsworth. *Class II.*—Mabon and Massé, equal; Blackader, Cameron, Rondeau, Kinghorn; Christie and Turner, equal; Rogers, Kirkpatrick, Duclos, Murchison. *Class III.*—Joseph, Currie, Carmichael, Larivière.

MENTAL AND MORAL PHILOSOPHY.

FOURTH YEAR.—(*Mental Philosophy*).—*Class I.*—Weir, Gamble, Young; Elder and McKenzie, equal. *Class II.*—Reid, Robertson, White, Smith (A. E.); Bolton and Bracq, equal; McLeod, Rutherford. *Class III.*—McDonald, Black, Edge, Fear, McNabb.

THIRD YEAR.—(*Moral Philosophy*).—*Class I.*—Rogers (John H.), Rielle, Walker, Hague (Henry J.), Smith (Arthur W.), Scott; Lafleur and Morin, equal; Treleaven. *Class II.*—Gregor and Jones, equal; Parent and Whillans, equal; Trenholme, Mackay, Kendall, Hazlewood, Barron. *Class III.*—Martin, Stirling, Stewart, Lawford, McKillop, Grant; Cockfield and Lanceley, equal; Lawrence, Thomas, *aeger*.

SECOND YEAR.—(*Elementary Psychology.*)—*Class I.*—Bowers; Lee and Murray, equal; Hunter; Bland and Shearer, equal; Greenshields and Porter, equal; Richardson, Griffith, Dixon. *Class II.*—Barlow and England and Kinloch, equal; Marceau, Ross (Lewis F.), Cameron, Gairdner (Thomas), Brown, Morris. *Class III.*—O'Halloran, Kinnear, Ferguson (C. F.), Fraser, Moore.

HEBREW.

SENIOR CLASS.—*Class I.*—Bowers, Lee, Smith (A. E.). *Class II.*—Fraser (W.) Mackay.

JUNIOR CLASS.—*Class I.*—Rondeau and Currie, (W. T.), equal; Rogers (G.), Joseph; Moore and Shearer and Shipperley, equal. *Class II.*—Richardson, Kinnear. *Class III.*—Rogers (J.) and Stewart, equal.

FRENCH.

FOURTH YEAR.—*Class I.*—None. *Class II.*—Lyman. *Class III.*—None.

THIRD YEAR.—*Class I.*—Morin. *Class II.*—Barron. *Class III.*—None.

SECOND YEAR.—*Class I.*—Bland, Cameron, Gairdner. *Class II.*—Dixon; Griffith, and Murray, equal; Lee; Greenshields and Ross, equal; Marceau, England. *Class III.*—Brown, O'Halloran, Porter, Hunter.

FIRST YEAR.—*Class I.*—Massé and Rondeau, equal; Blackader, Larivière, Duclos. *Class II.*—Kinghorn and Mabon and Wright, equal; Mackay and Turner, equal; Colquhon and Kirkpatrick, equal; Kennedy, Unsworth; Christie and Murchison, equal. *Class III.*—Joseph, Boyd, Carmichael, Cameron.

ASTRONOMY.

FOURTH YEAR.—*Class I.*—Ferguson, Falconer, Lyman, Weeks. *Class II.*—McKenzie and Tucker, equal; Gamble. *Class III.*—Bracq, Macpherson.

MATHEMATICAL PHYSICS.

FOURTH YEAR.—*Class I.*—Ferguson, McLeod (Arch.), Rutherford, Weeks; McDonald and Robertson, equal. *Class II.*—Weir and White, equal. *Class III.*—McKenzie; Black and Lyman, equal; McNabb, Macpherson, Bracq, Gamble.

THIRD YEAR.—*Class I.*—McKillop, Hague (H. J.), Parent, Gregor. *Class II.*—Jones, Trenholme; Martin and Rielle, equal; Rogers and Smith (A. W.), equal. *Class III.*—Lafleur; Barron and Cockfield, equal; Walker; Mackay and Stewart, equal; Morin, Lawford; Duffett and Thomas and Whillans, equal.

MATHEMATICS.

SECOND YEAR.—*Class I.*—Cameron (J. D.) and Murray (J. R.), equal; Dixon Bland, Bowers. *Class II.*—Shearer, England, Lee, Ferguson (C. F.). *Class III.*—Hunter, Brown, Griffith, Kinnear, O'Halloran, Ross (L. F.), Gairdner (T.), Marceau, Richardson (A. W.), Fraser (W.), Porter, Greenshields, Barlow.

FIRST YEAR.—*Class I.*—Mackay, Unsworth, Kennedy, Kirkpatrick, Mabon, Massé. *Class II.*—Blackader, Wright, Turner, Rondeau, Colquhoun, Larivière, Rogers, Kinghorn. *Class III.*—Christie, Cameron (K.), Duclos, Currie, Murchison, Boyd.

EXPERIMENTAL PHYSICS.

FOURTH YEAR.—*Class I.*—Falconer, White, Tucker, Elder, Macpherson. *Class II.*—Gamble, Lyman. *Class III.*—McLeod (Arch.), McDonald, Weeks, Bracq, McNabb, Ferguson.

THIRD YEAR.—*Class I.*—Trenholme; Rogers and Smith (A. W.), equal; Gregor, Lafleur, Whillans. *Class II.*—Mackay, Parent, Hague (H. J.), Walker, Lawford, Barron. *Class III.*—McKillop and Morin, equal; Stephen; Cockfield and Thomas, equal; Rielle; Jones and Stirling, equal; Duffett and Martin, equal.

MINERALOGY AND PHYSICAL GEOLOGY.

FOURTH YEAR.—*Class I.*—Macpherson, Elder. *Class II.*—Robertson, Weir, Rutherford, Gamble, Weeks. *Class III.*—Black.

ZOOLOGY.

THIRD YEAR.—*Class I.*—Lafleur, Trenholme, Walker; Smith (A.W.) and Barron, equal; McKillop; McKay and Thomas, equal. *Class II.*—Cockfield, Parent, Whillans, Martin; Duffett and Stephen, equal; Jones. *Class III.*—Lawford, Stirling, Stewart.

BOTANY.

SECOND YEAR.—*Class I.*—Porter, Bowers, Griffith, Gardner (A.); Hunter and Scott, equal; Hazlewood; Dixon and Lee, equal; Murray (J. R.). *Class II.*—Ross, Morris, Bland, Marceau; Greenshields and Barlow, equal; Cameron, England; Ferguson and Richardson, equal; Shearer, Brown, Kinloch, Gairdner (T.), Kinnear, Treleaven. *Class III.*—Fraser, O'Halloran, Lanceley.

CHEMISTRY.

FIRST YEAR.—*Class I.*—Wright, Mackay, Rondeau. *Class II.*—Murchison, Blackader, Turner, Massé; Mabon and Kirkpatrick, equal; Unsworth, Kennedy. *Class III.*—Boyd, Colquhoun, Shipperley, Christie, Joseph, Larivière, Duclos, Currie, Cameron, Rogers (Geo.), Gibson, Carmichael.

SESSIONAL EXAMINATIONS, 1881.

ORDINARY COURSE IN ARTS.

GREEK.

B. A. ORDINARY.—*Class I.*—Tucker, McKenzie. *Class II.*—Robertson, Black. *Class III.*—McIntyre, McNabb, Gamble.

THIRD YEAR.—*Class I.*—Rielle (*Prize*); Lafleur and Hague, equal (*Prizes*); Rogers; *Class II.*—Trenholme, Smith, Barron; Whillans and Gregor, equal; Morin, Stirling. *Class III.*—Cockfield and Mackay and Martin and Thomas, equal; Stewart, McKillop, Walker.

SECOND YEAR.—*Class I.*—Bland, Dixon, Lee, Cameron (J. D.), Griffith; Bowers and Greenshields and Murray, equal. *Class II.*—Gairdner; England and Porter, equal; Hunter and Ross (Lewis) and Shearer, equal; Marceau, Barlow, Fraser. *Class III.*—Morris, Gairdner; Ferguson and Kinnear and O'Halloran, equal; Richardson.

FIRST YEAR.—*Class I.*—Blackader and McKay, equal (*Prizes*); Unsworth; Mabon and Massé, equal; Rondeau. *Class II.*—Christie, Pedley, Cameron (Kenneth); Gerrie and Wright, equal; Kinghorn and Kirkpatrick and Duclos, equal. *Class III.*—Kennedy; Rogers (George) and Turner, equal; Boyd and Joseph, equal; Colquhoun and Lariviere and Currie and Fuller, equal; Carmichael.

LATIN.

B.A. ORDINARY.—*Class I.*—McKenzie and Tucker, equal; McLeod, White. *Class II.*—McDonald, Rutherford. *Class III.*—Black, Robertson, Gamble, McIntyre, McNabb.

THIRD YEAR.—*Class I.*— Hague (*Prize*); Lafleur and Rogers (John H.), (*Prizes*), equal; Gregor and Rielle, equal; Trenholme. *Class II.*—Barron and Cockfield, equal; McKillop and Smith and Whillans, equal; Morin; Martin and Stirling, equal; Stewart, Mackay. *Class III.*—Thomas, Walker.

SECOND YEAR.—*Class I.*—Bland, Lee; Dixon and Griffith, equal; Cameron (John D.); Gardner and Murray, equal; Ross (Lewis F.); Bowers and Greenshields, equal; Porter, England. *Class II.*—Shearer, Hunter, O'Halloran, Fraser; Ferguson and Gairdner, equal. *Class III.*—Marceau, Kinnear.

FIRST YEAR.—*Class I.*—Mackay (*Prize*); Unsworth (*Prize*); Massé and Wright, equal; Blackader, Mabon. *Class II.*—Rondeau; Christie and Kinghorn, equal; Kirkpatrick; Boyd and Kennedy, equal; Gerrie and Pedley, equal; Colquhoun and Murchison, equal; Duclos. *Class III.*—Joseph and Lariviere, equal; Rogers (George); Cameron and Turner, equal; Currie; Carmichael and Fuller, equal.

HONOUR EXAMINATIONS IN CLASSICS.

B. A.—*First Rank.*—Tucker, *Henry Chapman Gold Medal.* McKenzie. *Second Rank.*—None.

THIRD YEAR.—*First Rank.*—Hague. *Second Rank.*—None.

GREEK AND ROMAN HISTORY.

FIRST YEAR.—*Class I.*—Mackay (*Prize*); Unsworth; Blackader and Boyd and Colquhoun and Turner, equal; Christie and Kennedy and Wright equal; Mabon, Gerrie. *Class II.*—Kinghorn and Massé and Rondeau, equal; Carmichael and Kirkpatrick and Murchison, equal; Duclos and Rogers and Pedley, equal. *Class III.*—Cameron and Gibson and Joseph, equal; Fuller and Larivière, equal; Currie.

LOGIC, AND MENTAL AND MORAL PHILOSOPHY.

B. A. ORDINARY.—(*Mental and Moral Philosophy.*)—*Class I.*—Elder. *Class II.*—Reid, White, Macdonald; Bracq and McLeod, equal; Rutherford, Gamble, McNabb. *Class III.*—Robertson, Black, McIntyre.

OCCASIONAL STUDENTS IN FOURTH YEAR.—(*Mental Philosophy.*)—*Class I.*—Young. *Class II.*—Turk, Smith (A. E.).

THIRD YEAR.—*Moral Philosophy.*)—*Class I.*—Scott, Rielle, Rogers, Hague, Lafleur; Gregor and Kendall and Trenholme, equal; Morin. *Class II.*—Mackay, Hazlewood, Smith (A. W.), Barron; Treleaven and Walker and Whillans, equal; Martin, Cockfield, Stewart. *Class III.*—Thomas, Lanceley, Lawrence, McKillop, Stirling, Skinner.
Class Prizes.—Rielle and Rogers, equal; *Special Prize*, Hague.

SECOND YEAR.—(*Logic.*)—*Class I.*—Murray, Greenshields, Gardner, Bland; Bowers and Lee, equal. *Class II.*—Dixon; Cameron and England and Griffith, equal; Hunter and Ross, equal; Porter and Shearer, equal; Gairdner, Barlow, Richardson, O'Halloran. *Class III.*—Fraser and Marceau, equal; Kinnear, Ferguson, Morris, Moore.
Prize.—Murray.

ENGLISH LITERATURE.

B. A. ORDINARY.—*Class I.*—Falconer. *Class II.*—Rutherford. *Class III.*—Weeks.

ENGLISH HISTORY.

B. A. ORDINARY.—*Class I.*—Falconer. *Class II.*—Rutherford, Weeks. *Class III.*—None.

RHETORIC.

THIRD YEAR.—*Class I.*—Rogers (*Prize*). *Class II.*—Lafleur. *Class III.*—Gregor, Hague; Trenholme and Rielle, equal; Walker and Cockfield, equal; Whillans and Martin, equal; Smith; McKillop and Barron, equal.

ENGLISH LITERATURE AND HISTORY.

SECOND YEAR.—*Class I.*—Dixon (*Prize*); Bland, Murray, Gairdner, Griffith, Greenshields. *Class II.*—Lee; Kinnear and Bowers, equal; Barlow; Shearer and Ross, equal; England, Hunter, Fraser, Porter, Morris. *Class III.*—Cameron, Gardner, Marceau; O'Halloran and Ferguson, equal.

SECOND YEAR. ENGLISH ESSAY.—*Class I.*—England, Bowers, Lee, Dixon. *Class II.*—Gairdner, Bland, Murray, Barlow, Shearer, Morris, Marceau, Cameron; Gardner and O'Halloran, equal; Ross and Kinnear, equal; Greenshields, Porter; Griffith and Ferguson, equal; Hunter. *Class III.*—Fraser.

ENGLISH LANGUAGE.

FIRST YEAR.—*Class I.*—Boyd and Mackay, equal; Blackader, Rondeau, Unsworth, Mabon, Massé; Colquhoun and Wright, equal; Kennedy and Kinghorn and Murchison, equal; Gerrie and Turner, equal; Kirkpatrick. *Class II.*—Rogers; Christie and Duclos, equal. *Class III.*—Carmichael, Larivière; Cameron and Pedley equal; Currie and Gibson, equal.

ENGLISH LITERATURE.

FIRST YEAR.—*Class I.*—Mackay (*Prize*); Kennedy and Boyd, equal; Unsworth, Colquhoun, Massé. *Class II.*—Mabon, Turner, Cameron, Rogers; Christie and Wright and Duclos, equal; Carmichael, Rondeau; Kinghorn and Murchison, equal; Blackader. *Class III.*—Gerrie, Currie, Kirkpatrick, Pedley, Gibson, Larivière.

FRENCH.

FOURTH YEAR.—*Class I.*—Lyman. *Class II.*—None. *Class III.*—None.

THIRD YEAR.—*Class I.*—Morin. *Class II.*—None. *Class III.*—None.

SECOND YEAR.—*Class I.*—Bland (*Prize*); Dixon, Murray, Marceau. *Class II.*—Gairdner and Greenshields and Griffith, equal; Gardner, Cameron. *Class III.*—O'Halloran; Hunter and Ross, equal; England.

FIRST YEAR.—*Class I.*—Rondeau (*Prize*); Massé, Larivière. *Class II.*—McKay, Blackader, Unsworth, Duclos, Christie, Wright, Mabon; Kirkpatrick and Kinghorn, equal; Turner. *Class III.*—Kennedy; Cameron and Colquhoun, equal; Carmichael, Skaife, Murchison, Joseph.

GERMAN.

THIRD YEAR.—*Senior Division.*—*Class III.*—Martin.

THIRD YEAR.—*Junior Division.*—*Class III.*—Gregor.

SECOND YEAR.—*Senior Division.*—*Class I.*—Gairdner, Internoscia.

SECOND YEAR.—*Junior Division.*—*Class II.*—Dixon.

FIRST YEAR.—*Class III.*—Skaife (F. W.).

HEBREW.

Stewart Prize.

Alfred A. Bowers.

SENIOR CLASS.

Class I.—Bowers, Lee ; Fraser and Pritchard, equal ; Smith (A. E.). *Class II.*—Mackay (D.). *Class III.*—None.

JUNIOR CLASS.

1st Division.—*Class I.*—Rogers, George. (*Prize*) ; Currie ; Gerrie (A. W.) and Joseph, equal. *Class II.*—Moore and Pedley, equal. *Class III.*—Rogers. Fuller.

2nd Division.—*Class I.*—Kinnear, (*Prize*) ; Richardson, Shearer.

ASTRONOMY AND MATHEMATICAL PHYSICS.

B. A. Ordinary.—(*Astronomy and Optics.*)—*Class I.*—Ferguson, McKenzie. *Class II.*—Weeks. *Class III.*—Lyman, Gamble, Reid, Black ; Bracq and Macpherson, equal.

B. A. Ordinary.—(*Mechanics and Hydrostatics.*)—*Class I.*—Ferguson, McKenzie. *Class II.*—Weeks, White, Robertson ; McLeod (Archd.) and Rutherford, equal ; Gamble. *Class III.*—Bracq and McDonald, equal ; Reid, Lyman, Macpherson, McNabb, Black, McIntyre.

Third Year.—(*Math. Physics.*)—*Class I.*—Trenholme, Rogers, McKillop, Gregor. *Class II.*—Barron, Rielle, Hague. *Class III.*—Morin, Smith (A. W.), Lafleur, Mackay (D.), Whillans, Thomas, Walker, Cockfield, Stirling, Stewart, Martin.

MATHEMATICS.

Second Year.—*Class I.*—Murray (J. R.), Lee, Bland, Bowers, Cameron, Dixon. *Class II.*—None. *Class III.*—Shearer, England ; Greenshields and Hunter, equal ; Ferguson (C. F.), Griffith, Gardner (Alex.), Porter ; Kinnear and Ross (L. F.), equal ; Fraser, Morris, Gairdner (Thos.), Marceau, O'Halloran, Richardson, Barlow.

First Year.—*Class I.*—Mackay, Unsworth, Blackader, Massé, Kennedy, Wright. *Class II.*—Mabon, Kirkpatrick, Kinghorn. *Class III.*—Christie, Turner, Gerrie, Colquhoun, Pedley, Larivière, Rogers, Rondeau, Duclos, Murchison, Cameron.

HONOUR EXAMINATIONS IN MATHEMATICS.

Second Year.—*First Rank Honours.*—Murray.

First Year.—*First Rank Honours.*—Mackay

EXPERIMENTAL PHYSICS.

B. A. ORDINARY.—*Class I.*—Ferguson and Weeks, equal; Falconer, White, Tucker. *Class II.*—None. *Class III.*—McDonald, McLeod (Arch.), McNabb.

THIRD YEAR.—*Class I.*—Smith. *Class II.*—Trenholme, Lafleur; Barron and McKillop, equal. *Class III.*—Rogers; Gregor and Rielle, equal; Hague and Walker, equal; Whillans, Cockfield, Thomas, Morin.

B. A. HONOR EXAMINATION IN MATHEMATICS AND NATURAL PHILOSOPHY.

First Rank Honours.—Ferguson, *Anne Molson Gold Medal.*

NATURAL SCIENCE.

B. A. ORDINARY.—(*Geology and Mineralogy.*)—*Class I.*—Macpherson, Elder. *Class II.*—Bowers, Weeks, Robertson. *Class III.*—McIntyre, Black.

THIRD YEAR.—(*Zoology.*)—*Class I.*—Trenholme (*Prize*); Lafleur, Smith, Stirling, Barron, Thomas. *Class II.*—McKay, Cockfield, Martin, Whillans, Stewart. *Class III.*—McKillop, Walker.

SECOND YEAR.—(*Botany.*)—*Class I.*—Bowers (*Prize*); Porter, England, Griffith, Bland, Dixon, Shearer, Ross, Scott, Cameron, Lee. *Class II.*—Hazlewood, Murray (J. R.,) Greenshields, Barlow, Richardson; Hunter and Kinnear, equal; Gardner, Fraser, Ferguson, Morris, Gairdner. *Class III.*—Marceau, O'Halloran, Lanceley.

B. A. Honours in Natural Sciences.—McPherson.—*Logan Gold Medal.*

THIRD YEAR.—Smith, Lafleur, Trenholme.—*First Rank Honours.*

CHEMISTRY.

FIRST YEAR.—*Class I.*—Wright (*Prize*); Roudeau and McKay, equal; Mabon, Kennedy, Blackader. *Class II.*—Murchison; Duclos and Kirkpatrick, equal; Currie, Christie, Unsworth, Turner. *Class III.*—Massé, Rogers. Gerrie, Cameron, Colquhoun, Pedley, Kinghorn.

METEOROLOGY.

FOURTH YEAR.—*Class I.*—Weeks, McDonald (H). *Class II.*—McLeod. *Class III.*—None.

MORRIN COLLEGE.

B. A. ORDINARY EXAMINATION.

GREEK.—*Class I.*—Duclos. *Class II.*—Pritchard.

LATIN.—*Class I.*—Duclos. *Class II.*—Pritchard.

NATURAL PHILOSOPHY.—(*Astronomy and Optics.*)—*Class I.*—Duclos. *Class III.* Pritchard.

NATURAL PHILOSOPHY.—(*Mechanics and Hydrostatics.*)—*Class I.*—Duclos. *Class II.*—Pritchard.

MENTAL AND MORAL PHILOSOPHY.—*Class I.*—Duclos. *Class II.*—Pritchard.
ENGLISH HISTORY.—
FRENCH.— *Class I.*—Duclos.
HEBREW.—*Class I.*—Pritchard.

INTERMEDIATE EXAMINATION.

GREEK.—*Class I.*—Ross. *Class II.*—Meredith.

LATIN.—*Class I.*—Ross, Meredith.

MATHEMATICS.—*Class III.*—Ross (J. F.).

LOGIC.—*Class II.*—Ross, J. T. *Class III.*—Meredith.

ENGLISH.—*Class I.*—Ross. *Class III.*—Meredith.

FRENCH.—*Class I.*—None. *Class II.*—Meredith, Ross.

ST. FRANCIS COLLEGE.

INTERMEDIATE EXAMINATION.

GREEK.—*Class II.*—Mackie, McLeod, Dickson.

LATIN.—*Class I.*—Mackie. *Class II.*—McLeod, Dickson.

MATHEMATICS.—*Class I.*—Mackie, Dickson. *Class II.*—McLeod.

LOGIC—*Class III.*—Dickson, Mackie, McLeod.

ENGLISH.—*Class I*—Mackie. *Class II.*—Dickson, McLeod.

FRENCH.—*Class I.*—Dickson. *Class II.*—MacKie, McLeod.

SUPPLEMENTAL EXAMINATIONS 1880–81.

PASSED.—*September*, 1880.

(*a*)—SUPPLEMENTAL SESSIONAL EXAMINATIONS.

THIRD YEAR.—Ami, Gamble, Robertson, Rutherford.
SECOND YEAR.—Cockfield, Stewart.
FIRST YEAR.—Marceau.

(*b*)—SUPPLEMENTAL IN ONE SUBJECT.

THIRD YEAR.—Black.
SECOND YEAR.—Barron, Martin, Stirling, Thomas, Walker.

February, 1881.

(Supplemental to Christmas Examinations.)

(*a*)—SUPPLEMENTAL IN TWO OR MORE SUBJECTS.

FOURTH YEAR.—Black, Reed.

THIRD YEAR.—Duffett, Thomas, Stirling.

SECOND YEAR.—Gardiner (Alex), Morris.

FIRST YEAR.—Colquhoun.

(*b*)—SUPPLEMENTAL IN ONE SUBJECT.

SECOND YEAR.—Barlow, Ferguson, Porter.

FIRST YEAR.—Kinghorn.

FACULTY OF APPLIED SCIENCE.

THIRD YEAR.

FRED. MILLER.—Exhibition of $50.—Prizes in Railway Work and Descriptive Geometry.

ALBERT P. LOW.—First Rank Honours in Natural Science.—Prize in Geology.

JEFFREY H. BURLAND.—First Rank Honours in Natural Science, and Prize in Practical Chemistry and Assaying.

PASSED THE SESSIONAL EXAMINATIONS.

ADVANCED COURSE.

Miller, Green, Foster.

ORDINARY COURSE.

Civil Engineering.

Miller, Green, Collins, Foster.

Mining Engineering.

Low.

Practical Chemistry.

Burland.

SECOND YEAR.

DONALDSON B. DOWLING. — Prizes in Mathematics, Mathematical Physics, Descriptive Geometry, Surveying, Mechanism, Materials and Zoology.

PASSED THE SESSIONAL EXAMINATIONS.

Civil Engineering.

Dowling, Smith, Davis, McMillan.

Mechanical Engineering.

Street.

FIRST YEAR.

DAVID OGILVY.—Prizes in Mathematics and Chemistry.

PASSED THE SESSIONAL EXAMINATIONS.

Ogilvy, Forlong, Graham, Robert, Walters, Hamilton.

STANDING IN SPECIAL SUBJECTS.

REPORTS (OR ESSAYS) PREPARED DURING THE SUMMER OF 1880.

FOURTH YEAR.—*Class I.*—Waddell (*Suspension Bridge*), Archbald (*Dredging in the St. Lawrence*). *Class II.*—None. *Class III.*—Richard (*Montreal Water Works.*)

THIRD YEAR.—*Class I.*—Foster (*Chaudière Bridge, Q. C. Ry.*), Miller (*Piers and Abutments of Chaudière Bridge, Q. M. O. & O. Ry.*), Green (*The Construction of a Derrick*). *Class II.*—Burland (*Analysis of Copper Ores*), Collins (*Erection of Workshops and Fence Walls*). *Class III.*—Low (*Location of Section of Champlain Junction Ry.*).

SECOND YEAR.—*Class I.*—McMillan (*Tramways and Street Rys.*). Smith (*House Comfort*). *Class II.*—McTaggart (*A Cotton Factory*).

DESCRIPTIVE GEOMETRY. (*Courses of Civil and Mechanical Engineering.*)

THIRD YEAR.—*Class I.*—Miller (*Prize*). *Class II.*—(none). *Class III.*—Collins Green, Foster.

SECOND YEAR.—*Class I.*—Dowling (*Prize*). *Class II.*—McTaggart and Street, equal ; Smith, McMillan. *Class III.*--Davis, Skaife.

DESCRIPTIVE GEOMETRY. (*Mining Course.*)

Class I.—(None). *Class II.*—(Low.)

FREEHAND DRAWING.

FIRST YEAR.—*Class I.*—None. *Class II.*—Murray and Ogilvy, equal ; Graham, Routhier, Forlong ; Hamilton and Walters, equal ; Lesage, Robert.

SURVEYING.

THIRD YEAR.—*Class I.*—None. *Class II.*—Miller, Green, Foster, Collins.
SECOND YEAR.—*Class I.*—Dowling (*Prize*). *Class II.*—Smith, McMillan. *Class III.*—Davis.

MECHANISM.

SECOND YEAR.—*Class I.*—Dowling (*Prize*). *Class II.*—Street. Smith, McMillan, McTaggart, Davis, Skaife.

MECHANICAL WORK.

SECOND YEAR.—*Class I.*—Street. *Class II.*—Skaife, McTaggart.

MATERIALS.

FOURTH YEAR.—*Class I.*—Waddell, Archbald. *Class II.*—None. *Class III.*—Richard.
THIRD YEAR.—*Class I.*—Low and Miller, equal. *Class II.*—Foster and Green, equal; Collins.
SECOND YEAR.—*Class I.*—Dowling (*Prize*); Street. *Class II.*—Davis and Smith, equal; McMillan, Skaife, McTaggart.

APPLIED MECHANICS.

FOURTH YEAR.—*Class I.*—None. *Class II.*—Archbald, Waddell. *Class III.*—Richard.
THIRD YEAR.—*Class I.*—Miller. *Class II.*—Foster and Green and Low, equal. *Class III.*—Collins.

CONSTRUCTION.

FOURTH YEAR.—*Class I.*—None. *Class II.*—Archbald and Waddell, equal; Richard.

DESIGN &C.

FOURTH YEAR.—*Class I.*—Richard, Archbald, Waddell.

STEAM.

FOURTH YEAR.—*Class I.*—None. *Class II.*—Archbald, Waddell. *Class III.*—Richard.

HYDRAULICS.

FOURTH YEAR.—*Class I.*—None. *Class II.*—Waddell, Archbald. *Class III.*—Richard.

RAILWAY WORK.

FOURTH YEAR.—*Class I.*—Waddell.—*Class II.*—Archbald.—*Class III.*—Richard.
THIRD YEAR.—*Class I.*—Miller (*Prize*); Green and Foster, equal.—*Class II.*—None.—*Class III.*—Collins.

MINING.

THIRD YEAR.—*Class I.*—Low.

MINERALOGY AND BLOWPIPE.

THIRD YEAR.—*Class I.*—Low, Burland.

PRACTICAL CHEMISTRY.—(*Mining Course.*)

THIRD YEAR.—*Class I.*—None. *Class II.*—Low.

PRACTICAL CHEMISTRY.—(*Chemistry Course.*)

THIRD YEAR.—*Class I.*—Burland (*Prize*).

ASSAYING.

THIRD YEAR.—*Class I.*—Burland.

SAFETY AND EXPANSION VALVES. (*Essay.*)

FOURTH YEAR.—*Class I.*—Waddell. *Class II.*—Archbald, Richard.

RAILWAY CURVES AND GRADES. (*Essay.*)

THIRD YEAR.—*Class I.*—Miller, Green. *Class II.*—Foster. *Class III.*—Collins.
SECOND YEAR.—*Class I.*—Dowling, Davis. *Class II.*—Smith, McMillan.

ROCK BLASTING. (*Essay.*)

THIRD YEAR.—*Class I.*—Low.

ANALYSIS OF IRON ORES. (*Essay.*)

THIRD YEAR.—*Class I.*—Burland.

BELTING. (*Essay.*)

SECOND YEAR.—*Class I.*—Street. *Class II.*—McTaggart, Skaife.

EXPERIMENTAL PHYSICS.

THIRD YEAR.—*Class I.*—None. *Class II.*—Miller. *Class III.*—Collins, Burland; Green and Low, equal; Foster.

SECOND YEAR.—*Class I.*—Dowling. *Class II.*—Stephen. *Class III.*—Davis; Smith and Street, equal; Skaife, McMillan.

MATHEMATICAL PHYSICS.

THIRD YEAR.—*Class I.*—Miller. *Class II.*—Low, Green, Foster. *Class III.*—Collins, Burland.

SECOND YEAR.—*Class I.*—Dowling (*Prize*). *Class II.*—Davis, Smith, McMillan.

MATHEMATICS.

FOURTH YEAR.—*Class I.*—None. *Class II.*—Richard, Archbald, Waddell.
THIRD YEAR.—*Class I.*—None. *Class II.*—Green, Collins, Miller.
SECOND YEAR.—*Class I.*—Dowling (*Prize*); Smith. *Class II.*—McMillan. *Class III.*—Street, McTaggart, Davis.
FIRST YEAR.—*Class I.*—Ogilvy (*Prize*). *Class II.*—Graham, Forlong, Walters. *Class III.*—Robert, Hamilton, Routhier.

GEOLOGY AND MINERALOGY.

THIRD YEAR.—*Class I.*—Low (*Prize*). *Class II.*—Green, Foster. *Class III.*—Miller, Collins.

ZOOLOGY AND PALÆONTOLOGY.

SECOND YEAR.—*Class I.*—Dowling (*Prize*); Burland, Stephen, Smith. *Class II.*—McMillan. *Class III.*—Davis.

CHEMISTRY.

FIRST YEAR.—*Class I.*—Ogilvy (*Prize*); Dowling. *Class II.*—Forlong. Hamilton. *Class III.*—Davis, Street, Robert, Graham, Murray.

ENGLISH.

SECOND YEAR.—*Class I.*—Street. *Class II.*—Dowling, Davis, McMillan. *Class III.*—Skaife, McTaggart.
FIRST YEAR.—*Class I.*—Ogilvy. *Class II.*—None. *Class III.*—Graham and Forlong and Walters, equal; Robert, Hamilton, Lesage.

FRENCH.

THIRD YEAR.—*Class I.*—None. *Class II.*—Stephen. *Class III.*—Burland, Foster, Low, Green.
SECOND YEAR.—*Class I.*—None. *Class II.*—None. *Class III.*—Street.
FIRST YEAR.—*Class I.*—None. *Class II.*—Ogilvy, Routhier. *Class III.*—Robert, Forlong, Graham, Walters.

GERMAN.

THIRD YEAR.—*Class I.*—None. *Class II.*—None. *Class III.*—Miller, Collins.
SECOND YEAR.—*Class I.*—None. *Class II.*—Stephen, Dowling. *Class III.*—Smith, Davis.
FIRST YEAR.—*Class I.*—None. *Class II.*—None. *Class III.*—Robert.

Graduates of the University.

DOCTORS OF DIVINITY.

* Bethune, Rev. John (ad eundem).1843
* Falloon, Rev. Daniel [Hon.].....1844

DOCTORS OF LAWS AND OF CIVIL LAW.

* Abbott, Christopher, B.C.L. [D.C.L. in course].....1862
Abbott, Hon. J. J. C., B.C.L. [D C.L. in course].....1867
* Adamson, Rev. Wm. A. [D.C.L. hon].....1850
Badgley, Hon. Wm. [D.C.L. hon]...1843
* Bancroft, Rev. C., D.D. [LL.D. hon].....1870
Blackwood, Right Hon. Frederick Temple Hamilton, Earl of Dufferin [LL.D. hon].....1878
Bond, Rev. Wm., M.A. [LL.D. hon].1870
Butler, Thomas P., B.C.L. [D.C.L. in course].....1881
Campbell, George W., M. A., M D. [LL.D. hon].....1875
Chamberlin, B, M.A., B.C.L., [D.C.L. in course].....1867
Chauveau, Hon. Pierre J. O., [LL.D. hon].....1857
Cordner, Rev. John [LL.D. hon]....1870
Cornish, Rev. George, M.A. [LL.D. in course].....1872
* Cushing, Lemuel, M.A., [LL.D. in course].....1879
Davidson, Charles Peers, M.A., B.C.L. [D.C.L. in course].....1875
* Davies, Rev. Benjamin, Ph.D. [LL.D. hon].....1856
Dawson, John William, M.A. [LL.D. hon].....1857
DeSola, Rev. A. [LL.D. hon]..... 1858
Douglas, Rev. Geo. [LL.D. hon]....1870
Doutre, Gonzalve, B.C.L. [D.C.L. in course].....1873
Duff, Rev. Archibald, M.A., (LL.D. in course) 1881
* Falloon, Rev. D., D.D. [LL D. hon].....1862
Frechette, Louis H., [LL.D hon]....1881
Gilman, Francis E., M.A., B.C.L. [LL.D. in course].....1877
Girouard, Désiré, B.C.L. [D.C.L. in course].....1874
* Head, Right Hon. Sir Edmund W., Baronet, M.A. [LL.D. hon]...1862
Hemming, Edward J., B.C.L. [D C.L. in course].....1871
* Holmes, Andrew F., M.D. [LL.D. hon].....1858
Howe, Henry Aspinwall, M.A. [LL.D. hon].....1870
Hunt, T. Sterry, M.A. [LL.D. hon]...1865
Jenkins, Rev. John (D.D. Univ. N. Y.) [LL.D. hon] 1879
Kerr, William H. [D.C.L. in course].....1873
Kirby, James, M.A., B.C.L. [D.C.L. in course] [LL.D. in course].....1874
Laflamme, Hon. R. G., B.C.L. [D.C.L. in course].....1873
Lawson, G., Ph.D. [LL.D. hon].....1862
* Lafrenaye, P. R., B.C.L. [D.C.L. in course].....1873
Leach, Rev. Wm. T., M.A. [D.C.L. hon].....1849
[LL.D. hon].....1857
* Logan, Sir William E., Kt. [LL.D. hon].....1856
* Lundy, Rev. Francis [D.C.L. hon].....1843
Lyall, Rev. W. [LL.D. hon].....1864
McGregor James, M.A. [LL.D. in course].....1880
MacVicar, Rev. D. H. [LL.D. hon]..1870
Meredith, Edmund A., B.C.L. [LL D. hon].....1857
Miles, Hy. H., M.A. [LL.D. hon].....1866
Morris, Hon. Alexander, M.A., B.C.L. [D.C.L. in course].....1862
Morrison Rev. Jas. D., M.A. (D.D. Union College N. Y.) [LL.D. in course] 1880
Parkman, Francis (M.A. Harvard) [LL.D hon].....1879
Robins, Sampson Paul, M.A. [LL.D. in course].....1880
Rollitt, Albert K. (LL.D., London Univ.) [LL.D. ad eun).....1871
Selwyn Alfred R. C., F.R.S. [LL.D. hon].....1881
* Smallwood, Charles, M.D. [LL. D. hon].....1856
* Smith, William Stuart [LL.D.hon].1858
* Vallieres de St. Real, Hon. J. R. [D C.L. hon].....1844
Wickes, Rev. Henry [LL.D. hon]...1868
Wicksteed, Richard M., M.A., [LL.D in course].....1879
Wilkes, Rev. Henry, M.A., D.D. [LL.D. hon].....1870

* Deceased.

*Adsetts, John, 1866
Alexander, Robert A., Grimsby, O 1871
Alguire, Duncan O., Cornwall, O 1873
Allard, Emery, Belœil Q 1866
†Allan, Hamilton, Oconto, Wis 1872
Alloway, Thomas Johnson, Montreal 1869
Anderson, Alex., Med. Dept. Indian Army 1866
*Anderson, John C., 1865
Archer, Ths., Wandsworth, Eng 1869
Ardagh, Johnson, Orillia, O 1869
Armstrong, Geo. E., Montreal 1877
*Arnoldi, Daniel Hon 1847
Atkinson, Robert, 1862
Ault, Alexander, Ochkosh, Wis 1860
*Ault, Charles, 1855
Ault, James F., Montreal 1855
Ault, Edwin D., Aultsville, Q 1868
Austin, Fred. John, Sherbrooke, Q 1862
Ayer, N., M.A., Sackville, N B 1880
Aylen, John, Aylmer, Q 1857
Aylen, James, Aylmer, Q 1863
Backhouse, J. B., Braidwood, Ill 1870
Bain, D. S. E., Staff Surgeon Maj. 1868
Bain, Hugh U., Rat Portage, Man 1875
Baird, James, Carp, Co Carleton, O 1870
Baker, Albert, 1848
Barclay, George E., Parkhill, O 1870
*Barnston, James [ad eun] 1856
Battersby, Charles, Port Dover, O 1861
Baynes, Donald, M.A., Canterbury, Eng 1876
Baynes, George Aylmer, Montreal 1869
Beatty, D., Richmond, Q 1862
* Beaudet, Alfred, 1865
Beaudry, Lewis B., St Cesaire, Q 1871
Beckstead, M., Lisbon, St Law Co, N Y 1878
†Bell, James, Montreal 1877
*Bell, John, M.A., 1866
Bell, Robert, C E. Montreal 1878
Bell, Robert W., Peterboro, O 1873
Belleau, Alfred, Quebec 1862
*Bergeron, Joseph, 1870
Bergin, Darby, Cornwall, O 1847
Bessey, William E., Montreal 1863
Bender, Prosper, Quebec 1865
Benson, Joseph B., Chatham, N B 1875
Bibaud, Jean G., Montreal 1843
Blackader, Alex. D., B.A. Montreal 1871
Blacklock, John J., Chesterville, O 1851
*Blanchet, J. B. 1863
Blair, Robt. C., Chicoutimi, Q 1865
*Bligh, John W., 1865
Bogart, Irvine D., Campbellford, O 1859
*Bomberry, Geo. E., 1875
Bonesteel, S. A., Columbus, Neb 1881
Boulter, George H., Sterling, O 1852
*Boyer, Louis, 1842
*Boylan, Andrew A., 1857
Boyle, Albert D., Carbonear, Nfld 1877
*Bowman, William E., 1860
Bower, Silas J., Waddington, N Y 1865
*Bradley, William, 1869
*Brathwaite, Francis H., 1863
Brandon, John, Ancaster, O 1867
Breslin, William I., 46th Regiment 1847
Brigham, Josias S., Philipsburgh, Q 1848
Brissette, Henry R., Lowell, Mass 1871
Bristol, Amos S., Napanee, O 1850
Brodeur, Alphonse, 1863
Brodie, John, Honolulu, Sdwh Isl 1877
Brooks, Samuel T., St Johnsbury, Vt 1851
Brouse, William H, Ottawa, O 1847
Brouse, Jacob E., Brockville, O 1861
Brossard, J. B. J., Laprairie, Q 1875
Brown, Thos. L., Ottawa 1881
Brown, J. L., Platsville, O 1879
Brown, Peter E., Montreal 1863
Brown, Harry, 405 W Washington St, Chicago 1873
Browne, Arthur A., B. A., Montreal 1872
Bruneau, Adolphe, Sorel, Q 1853
*Bruneau, Olivier T., (Hon) 1843
Bruneau, Onésime, St Bruno, Q 1851
Bryson, William G., Fenelon Falls, O 1897
Bucke, Richard Maurice, London, O 1852
*Bucke, Edward H., 1862
*Buckle, John M. C., 1869
Buckley, William P., Prescott, O 1870
Bull, George J., Worcester, Mass 1869
*Bullen, Charles F., 1864
Buller, Frank, Montreal 1879
Burgess, J. A., Listowell, O 1868
Burch, B. F., Walla Walla, Wash Ter 1866
*Burland, John H., 1863
Burland, Samuel C., Chester, Penn 1877
Burland, William B., Montreal 1872
Burland, William H., Montreal 1875
Burrows, Philip P., Lindsay, O 1866
*Burnham, Robert Wilkins, 1860
*Burns, Alfred J., 1854
Burritt, Horatio C, Peterboro, O 1863
Burwash, Henry J., Minneapolis, Minn 1879
*Butler, George C., 1865
Butler, Billa F., Brighton, O 1879
*Buxton, John N., 1849
Cahalan, James, Wyandotte, Mich 1880
Cameron, Paul, Lancaster, O 1881
Cameron, Duncan H., Emerson, Man 1877
Cameron, James C., Montreal 1874
Cameron, John D., Norway, Mich 1878
*Campbell, Donald Peter, 1862
Campbell, Francis Wayland, Montreal 1860
Campbell, G. W., M.A., [ad eun] Montreal 1843
Campbell, J., Waracknabeal, Victoria 1876
*Campbell, Samuel, 1866
Campbell, John, Seaforth, O 1869
Cannon, Gilbert, Almonte, O 1877
Carmichael, D. A., Mar. Hosp. Serv, U S 1873
Carey, Augur D. L. [ad eun] 1834
Carman, Philip E., Detroit, Minn 1879
Carman, John B., Detroit, Minn 1879
Cassidy, David M., Med. Supt. Country Asylum, Lancaster, Eng 1867
Cassady, John F, Goderich 1865
*Carroll, Robert W W., 1859
Carson, J. H., Port Hope, O 1881
*Carson, Augustus, 1843
Carter, Samuel A., Meadow Vale, O 1859
Case, William, Hamilton, O 1879
Casgrain, Charles E., Windsor, O 1851
Cattanach, Andrew J., London, Eng 1871
Chagnon, Vi ce Jaus G. B., St Pie, Q 1861
*Challiner, Francis, 1849
Cherry, William, Toledo, Ohio 1869
*Chesley, George Ashbold, 1862
Chevalier, Gustave, Bedford, Que 1860

Chevalier, Napoléon E., Iberville, Q 1873
Chipman, C. J. H., B.A., Prescott, O 1868
Chisholm, Alex., Alexandria, O 1878
Chisholm, Murdoch, Bay Roberts, Nfld 1879
Christie, George H., Lachute, Q 1872
Christie, John B., 1865
Christie, Thomas, Lachute, Q 1848
Christie, John H., B.A., 833 W 22nd St, Chicago 1875
*Church, Charles H., 1862
Church, Clarence R., Ottawa 1868
Church, Coller M., Aylmer, Q 1855
Church, F. W., Aylmer, Q 1880
Church, Levi R., Montreal 1857
Church, Mills K., Pierrepont Manor, N Y 1864
*Church, Peter H., 1846
Clarke, Octavius H. E., Cohoes, N Y 1870
Clarke, Wallace, B.A., Utica, N Y 1871
Clark, Richard A., Oakville, O 1870
Clarke, F. G. B., Upper Norwood, Lond, Eng 1876
Clemesha, John W., Port Hope, O 1867
Clement, Victor A., St Guillaume, Q 1866
* †Cline, John D., B.A., 1874
Clunes, Daniel, Nanaimo, B C 1870
Codd, Alfred, Winnipeg, Man 1865
*Collins, Charles W., 1869
Collison, R., Norfolk, St Law Co, N Y 1878
Colquhoun, George, Dunham Flats, Q 1876
Comeau, John B., St David, Q 1870
Cook, Guy R., B.A., Louisville, N Y 1876
Cook, Hermon L., Napanee, O 1854
Cooke, Charles H., Toronto, O 1866
Cooke, Sidney P., Hull, Q 1869
Cooke, W. H., Drummondville, Q 1876
Copeland, William L., Chicago 1872
*Corbett, A. P. M., 1854
Corbett, William H., Surg. Maj. Army Med. Dept. 1854
Corlis, Josiah, St Thomas, Ont 1869
Corson, John, 1866
Cotton, C. L., Cowansville, Q 1877
*Cowley, Thomas McJ., 1870
Cowley, D. K., Portage du Fort, Q 1880
Cox, Frank, Charlottetown, P E I 1869
Coyle, Henry W., Sorel, Q 1876
Craig, Thornton, Capay, Cal 1876
Craik, Robert, Montreal 1854
Cram, Daniel C., Lawrence, Kan 1872
*Crawford, James [ad eun] 1854
Cream, Thomas N., Chicago, Ill 1876
Crichton, Stuart, Sonora, Cal 1865
Crothers, William, Stanbridge, Q 1876
*Culvers, Joseph B., 1848
*Cunynghame, W. C. Thurlow, 1858
Cutter, Frederick A., Sutton, Q 1873
Daly, Guy D. F., 1868
Dansereau, Charles, 1842
Dansereau, Charles, 1869
Dansereau, Pierre, 1835
D'Avignon, F. F., Chicago, Ill 1871
*Dease, Peter Warren, 1847
DeBonald, G. S., Berthier en haut, Q 1862
DeBoucherville, Charles B., Quebec 1843
DeGrosbois, T. B., Chambly, Q 1868
Demorest, B. G. G., Sterling, O 1852
*Desaulniers, Antoine A., 1863
*DeCelles, Charles D., 1841
Dibblee, G. O., More's Mills, N B 1880
*Dice, George, 1864
*Dick, James R., 1842
Dickinson, James S., Cornwall, O 1846
*Dickinson, George, 1868
Dickson, William W., Pembroke, O 1863
Digby, F. Winniett, Brantford, O 1863
*Dodd, John, 1864
Donnelly, C. H., Waresville, Texas 1860
*Dorion, Sevère, 1843
*Dorland, Enoch G., 1850
Dorland, James, Milwaukee, Wis 1875
Dougan, William, St Catharines, O 1867
*Douglass, James [Hon] 1847
Dowling, John F., Egansville, O 1875
Drake, Joseph M., Montreal 1861
Dubuc, Charlemagne, Montreal 1864
*Duckett, Stephen, 1853
Duckett, William A., Montreal 1859
Dufort, Thadée A., 1865
Duhamel, Louis, Wright, Q 1860
Duncan, George, Fareham, Hants, Eng 1866
Duncan, Gideon M., Bathurst, N B 1871
Duncan, George C., London, Eng 1875
Duncan, James S., Surg. Maj. Army 1858
*Duncan, John, 1871
*Dunn, William Oscar, 1843
Dunsmore, John M., Mitchell, O 1870
Dupuis, Joseph B., Clarenceville, Q 1856
Easton, John, Prescott, O 1852
Eberlé, Harry A., Webster City, Iowa 1876
Edwards, Elíphalet G., London, O 1855
Edwards, J. S., London, O 1880
Edwards, Oliver C., Montreal 1873
Elkinton, A. G., Surg. Maj. Gren. Guards 1862
Ellison, S. R., 268 W 42rd St, N Y 1873
Emery, Gordon J., Minneapolis, Minn 1857
*English, T. F., 1858
*Erskine, John, 1860
Ethier, Calixte, St Eugène, Q 1867
Evans, Griffith, Vet. Dept. Army, Woolwich, Eng 1864
Ewing, William, Hawkesbury, O 1873
Falkner, Alexander, Lancaster, O 1866
Falls, Samuel K., Wakefield, Q 1875
Farewell, G. McGill, Duffin's Creek, O 1872
Farewell, W. G., Surgeon U S Navy 1868
Farley, James T, Fremont Centre Mich 1877
Farley, John J., Belleville, O 1873
Faulkner, George W., Sterling, O 1871
Faulkner, D. W., Foxboro, O 1878
Feader, H. C., Morrisville, N Y 1881
Fenwick, George E., Montreal 1847
Fergusson, A. A., Cornwall O 1864
Fergusson, Alex. R., Dalhousie Mills, O 1866
Fielde, E. C., Prescott, O 1881
*Finlayson, John, 1834
Finnie, John T., Montreal, Q 1869
*Fisher, John, 1847
*Fitzgerald, James, 1865
Fortier, Louis A., St David, Q 1878
Fortin, Pierre, Montreal 1845
Fortune, Lewis M., Huntingdon, Q 1873
*Foster, Stephen Sewell, 1846
Fraleigh, William S., Richmond, O 1869
Fraser, H. D., Pembroke, O 1881
Fraser, Alex. C., Wallaceburg, O 1877
*Fraser, William, 1836
Fraser, William H., 1867
Fraser, Donald M., Stratford, O 1869
Fraser, Donald, Chicago, Ill 1868
Fraser, J. R., Medcalfe, O 1878
Freeman, Charles M., Cape Ireland, N S 1871
Fuller, W., Grand Rapids, Mich 1866
Fuller, H LeRoy, Sweetsburg, Q 1870
Fulton, James H., Montreal 1863

*Garvey, Joseph, 1852
Gardner, H. H., West Lynne, Mann 1878
Gardner, Matthew, Davisville, Cal 1871
Gardner, William, Montreal 1867
Gascoyne, Geo. E., Brockville, O 1861
Gaviller, Edwin A., Chippawa, O 1873
*Gauvreau, Elzéar, 1855
*Gauvreau, Lewis H., 1836
Gendron Thomas, St Raymond, Q 1866
Gernon, George W., Marieville, Q 1872
*Gibb, George D., 1846
Gibson, John B., Cowansville, Q 1855
Gibson, W. B., Dunham, Q 1878
*Gibson, Edward B., 1864
Gilbert Henry L., Sherbrooke, Q 1875
Gillis, John A. F., Summerside, P E I 1877
Gillies, John, Teeswater, O 1867
Gilmour, Angus A., Modesto, Cal 1868
*Giroux, Philope, 1859
Girdwood, Gilbert P., Montreal 1865
Glenn, C. W. E., Chambly, Q 1858
Godfrey, Robert, Montreal 1844
Godfrey, Abraham C., Freemantle, Southampton, Eng 1865
*Goodhue, P. J., 1875
Goforth, Franklin, Stevensville, O 1863
Gordon, C. M., Ottawa, O 1881
Gordon, Robert, Arlington, Ill 1868
*Gordon, William Wallace, 1863
Graham, Charles E., Hull, Q 1865
*Graham, Henry, 1863
Graham, Kenneth D., Ottawa, O 1875
Grant, Donald J., Woodbridge, O 1863
Grant, James A., Ottawa 1854
Grant, William, Perth, O 1867
Gray, W. L., Pembroke, O 1881
Gray, John S., North Williamsburg, O 1876
Gray, Thomas, Brigus, Nfld 1879
Greaves, Henry C., Barbadoes 1877
Greenwood, F. S., St Catharines, O 1878
Greer, T. A., C. S Minia, Halifax, N S 1876
Grenier, L. P. A., Lotbinière, Q 1863
Groves, George H., Carp, O 1879
Guerin, James J. E., Montreal 1878
Guest, Thomas F., St Mary's, O 1873
Gunn, James, Dunham, Co Grey, O 1861
Gurd, David F., Montreal 1879
Gustin, William Claul, Detroit, Mich 1863
Hagarty, Dan. M. J., Portage la Prairie, Manitoba 1866
*Hall, Archibald [ad eun] 1848
*Hall, James B., 1868
Hall, J. W., 1846
Halliday, James T., Grafton, O 1865
*Hamilton, Andrew W., 1859
Hamilton, Charles S., Belleville, O 1868
Hamilton, John L., Stratford, O 1871
Hamilton, Rufus E., Sutton, Q 1861
Hamel, Joseph A, Murray Bay, Q 1856
Hammond, J. H., Montreal 1869
Hanover, William, Seaforth, O 1875
*Hart, Frederick V., 1835
Harvie, J. B., Ottawa, O 1881
Harvey, Wm. A., Harriston, O 1874
Harding, F. W., Georgeville Q 1868
Harkin, Henry, Guelph, O 1867
*Harkin, William, Vankleek Hill, O 1858
Harkness, John, Hickson's Corners, O 1862
Harkness, Andrew, New Lancaster, O 1869
Hart, George C., Prescott, O 1879
Hanington, E. B. C., Yale, B C 1875
Hanna, Franklin, Lansdown, O 1879
Harrison, David H, St Mary's, O 1864

Hayes, James, Simcoe, O 1866
Heard, C. De W., Charlottetown, P E I 1880
Hebert, P. Zotique, Whitehall, N Y 1872
† Henderson, Alex. A., Ottawa, O 1870
*Henderson, E. G., 1874
* Henderson, Peter, A. M., 1848
Henderson, And., Montreal 1880
* Henry, Walter, Hon 1853
* Henry, Walter J., 1856
Henwood, Alfred J., Brantford, O 1879
* Hervey, Jonas J., 1866
Hethrington, Harry, Stanstead, Q 1872
Heyd, H. E., Brantford, O 1881
Hickey, Charles E., Morrisburg, O 1866
Hickey, Samuel A., B.A., Aultsville, O 1874
Hils, Joseph, Woonsocket, R I 1873
Hingston, W. H., Montreal 1851
Hockridge, Thos. G., London, Eng 1874
* Holden, Rufus 1844
Holwell, John, Kingston, Jamaica 1868
* Holmes, Andrew F. [ad eun] 1843
Houston, D. W., Cohoes, N Y 1881
Howard, James, Lachine, Q 1867
Howard, Robert, St John's, Q 1872
Howard, R Palmer, Montreal, Q 1848
Howden, Robert T., Perth, O 1857
Howey, W. H., Delhi, O 1878
Howitt, William H., Toronto, O 1870
Howland, Francis L., Huntsville, O 1867
Hulbert, E. Augustus, Brooklyn, N Y 1860
Hume, William L., Leeds, Q 1875
Hunt, J. J., London, O 1881
Hunt, Henry, Williamstown, O 1876
Hunt, J. H., Surg. Maj. Army. Med. Dept 1869
Hunt, Lewis G., Sheffield, Eng 1871
† Hurd, Ed. P., Newburyport, Mass 1865
Hurlbert, George W., Thornbury, O 1859
Hurlbert, Richard W., Brucefield, O 1873
Hutchinson, John A., Wingham, O 1878
Imrie, A. W., Montreal 1879
Inksetter, D. G., Dundas, O 1880
Irvine, James C., Bonny, West Africa 1866
Irwin, J. L., Montreal, Q 1879
Ives, Eli, Coaticook, Q 1863
*Jackson, A. T., 1846
Jackson, Wm. Fred., Brockville, O 1873
Jackson, Joseph A., Manchester, N H 1879
Jamieson, Alex., B.A., Kansas City, Mo 1877
Jamieson, Thomas A., Lancaster, O 1875
Jamieson, Chas. J., Rockland, O 1879
Johnson, James B., London, Eng 1876
Johnston, J. C., Surg. Maj. Army 1867
Johnston, Thomas G., Sarnia 1871
Jones, Charles R., Hatley, Q 1874
Jones, George N., Chicago, Ill 1874
*Jones, Thomas W., [ad eun] 1854
*Jones, Jonathan C., 1865
Jones, Wm. Justus, Prescott, O 1856
Jones, H. J. M., Wabash Av, Chicago 1873
Josephs, G. E., Pembroke, O 1881
Kearney, Wm. J., Texas 1875
Keefer, Wm. N., B.A., Bengal Army 1869
* Keeler, Thomas, 1859
† Kelly, Clinton Wayne, Louisville, Ky 1867
* Kelly, Wm., 1846
† Kelly, Thomas, Durham, O 1873
Kempt, William, Lindsay, O 1864
Kennedy, Richard A., Montreal 1864
* Kerr, James, 1858
Killery, St. John, Surg. Maj. Army 1862
King, Wm. M. H., St Sylvestre, Q 1859
King, Reginald A. D., Compton, Q 1868

King, Richard, Peterboro, O 1867
* Kirkpatrick, A., 1856
Kittson, John G., Surg. North West Mounted Police 1869
Kittson, Edmund G., Hamilton, O 1873
* Knowles, James A., 1866
Kollmyer, Alex. H., Montreal 1856
Laberge, Ed , St Philomène, Q 1856
Lane, John A., Oswego, N Y 1877
Lang, Christopher L., Owen Sound, O 1876
Lang, W. A., St Mary's, O 1881
* Lang, Thos. D., 1866
Langlois, O. X., Windsor, O 1875
* Langrell, Richard T., 1865
Larocque, A. B., Montreal, Q 1847
Law, W. C., Bond Head, O 1863
Law, William K., 1877
† Lawford, John B., London, Eng 1879
* Lawrence, Henry J. H., 1862
Leavitt, Julius, Melbourne, Q 1866
Leclere, George, Montreal 1851
Leclair, Napoléon, Lancaster, O 1861
Lee, James C., 1858
* Lee, John Rolph, 1849
Lefebvre, John M., Brockville, O 1878
Legault, D., Salaberry de Valleyfield, Q 1866
Lemoine, C., St Pierre, Ile d'Orléans 1850
Lepailleur, Léonard, St Martine, Q 1848
Leprohon, John L., Montreal 1843
Levi, Reuben, Inverness, Q 1876
Lindsay, Heriot, St Johns, Q 1861
* Lister, James, 1862
Lloyd, H. W., London, O 1879
* Locke, C. F. A., 1872
* Logan, David D., 1842
Logan, Robert, Iona, Mich 1880
Logie, William, 1833
* Long, Alexander, 1844
Longley, Edmund, Mansonville, Q 1866
Longpré, Pierre F., 1848
* Loupret, André, 1850
Loux, William, Russell, O 1870
Loverin, Nelson, Montreal 1855
Lovett, William, Ayr, O 1876
† * Lucus, T. D'Arcy, 1869
Lunam, H., B.A., Wakefield, Q 1881
Lundy, E. L., Surg. Maj. Army 1862
Lyford, Chs. C., Minneapolis, Minn 1879
Lyon, Arthur, Shawville, Q 1861
Maas, Rudolph, Negaunee, Mich 1880
* MacDiarmid, John D., 1847
MacDonald, Angus, St Paul, Min 1863
* MacDonald, Colin, 1853
Macdonald, R T , Montreal, Q 1881
MacDonald, Roderick A., Rockwood, Man 1874
MacDonell, Æneas, Ottawa, O 1849
MacDonnell, Richard L., B.A., Montreal 1876
MacFarlane, William, Almonte, O 1869
Macfie, James, Fort Covington, N Y 1869
MacIntosh, Robert, Meaford, O 1863
Mack, Francis Lewis, Arden, O 1862
* Mackie, J. R., 1865
* Macklem, Samuel S., 1859
MacLean, Archibald, Sarnia, O 1867
* Macnabb, Francis A. L., 1870
McArthur, Robert D., Chicago 1867
McArthur, John A., Port Elgin, O 1879
McBain, John, Martintown, O 1874
McCallum, Duncan C., Montreal 1850
McCann, J. J., B.A., Hopkinton, Mass 1878
McCarthy, W., Chicago, Ill 1867
* McConkey, T. C., 1872
McConnell, John B., Montreal 1873

* McCord, John D., 1864
McCormick, Andrew G., Richmond, Q 1874
McCrimmon, Donald A., Lucknow, O 1869
McCrimmon, John, Kincardine, O 1878
McCrimmon, Milton, Palermo, O 1878
McCullough, George, St Mary's, O 1879
* McCullough, Michael Hon 1843
McCully, Oscar J. M. A., Baie Verte, N B 1879
McCurdy, John, Chatham, N B 1866
McDermid Wm., Dunvegan, O 1875
McDiarmid, Donald, Athol, O 1867
McDiarmid James, Prospect. C. Lk. O 1873
† McDonald, John A., Montreal 1880
McDonald, Jos. D. A., 1873
McDonald, R. C., Owatonna, Minn 1880
McDonald, Roderick, Cornwall, O 1834
McDonell, Alex. R., Alexandria, O 1874
McDonell, Angus C., Montreal 1852
McDougall, Peter A., Ottawa, O 1864
* McDougall, Peter A., 1847
McEachran, W., Montreal 1880
McEwen, Findlay, Carlton Place, O 187-
McGannon E. A., Prescott, O 1881
McGarry, James, Drummondville, O 1858
McGeachy, William, Iona, O 1867
McGill, William, Oshawa, O 1849
* McGillivray, Donald, 1861
McGowan, Henry W., Bolton, Q 1867
McGrath, Thomas, 1849
McGregor, Duncan, Clatsworth, O 1861
McGuigan, W. J., Port Edward, O 1879
* McGuire, Bernard D., 1873
McIlmoyl, Henry A., Clayton, N Y 1876
McInnes, Walter J., East Saginaw, Mich 1865
McIntosh, James, Vankleek Hill, O 1859
McIntosh, Donald J., Vankleek Hill, O 1870
McIntyre, Peter A., Souris, P E I 1867
McKelcan, George Lloyd, Hamilton, O 1860
McKenzie, B. E., B.A., Aurora, O 1880
McKay, John, Woodville, O 1869
McKay, Walter, Woodburn, O 1854
McKinley, John K., Clarendon Ctre, Q 1878
McLaren Peter, Brudenell, P E I 1869
McLaren, Peter, Paisley, O 1861
McLaren, Peter, Ormstown, Q 1872
McLaren, D. C., B.A. Montreal, Q 1880
* McLean, Alexander, 1860
McLeod, James, Charlottetown, P E I 1873
McMicking, George, Goderich, O 1851
McMillan, Æneas J., Edwardsburg, O 1874
McMillan, Louis J. A., Rigaud, Q 1860
McMillan, John, Pictou, N S 1857
McMurray, Samuel, 1841
* McNaughton E. P., 1834
McNee, Stewart, Portage du Fort, Q 1879
* McNeece, James, 1869
McNeil. Ernest, Vernon River, P E I 1878
McNulty, M., Brasher Falls, N Y 1880
McQuillen, James, Marquette, Mich 1874
McRae. George, Ottawa, O 1876
McTaggart, Alexander, Parkhill, O 1869
* McVean, John M., 1865
Madill, John, Thornton, O 1867
Major, George W., B.A., Montreal 1871
Malcolm, John Rolph, Scotland, O 1861
* Malhiot, Alfred, 1846
Malloch, Edward C., Ottawa, O 1863
* Malloch, William B., 1867
Mallory, Albert E., Yarkworth, O 1872
Marceau, Louis T., Napierville, O 1872
Markell, Richard S., Coverdale, Cal 1867
* Marr, Israel P., 1849
Marr, Walter H., New York, N Y 1859
Marston, Alonzo W., Hull, Q 1871

Marston, John J., U S Army 1863
Mason, James Lindsey, M.A., 1863
Mattice, Rich. J., Cornwall 1875
†Mathieson, John H., St Mary's, O 1871
*Mathieson, Niel, 1870
Mayrand, William, St Andrews, Q 1847
Meane, John, Staff Srg. Maj. Army 1869
Meek, James A., New York 1875
*Meigs, Malcolm R., 1865
Menzies, John B., Lanark Village, O 1879
*Meredith, Thomas L. B., 1842
Metcalfe, Henry J., Thurso, Q 1876
Mewburn, F. H., Montreal, Q 1881
Mignault, Henri A., St Denis, Q 1860
Mignault, L. D., B.A., Montreal 1880
Miller, R., Surg. N. W. Mounted Police, Battleford, N W T 1870
Mills, Thos. W., M.A., London, Eng 1878
Miner, Frank L., Abercorn, Q 1877
*Mines, William W., 1874
Mitchell, Fred. H., London, O 1871
Moffatt, John Edw., Staff Surg. Army 1862
Moffatt, Walter, Quebec 1868
Molson, William A., Montreal 1874
Mongenais, Napoléon, Rigaud, Q 1865
Monk, Geo. H., St Thérèse, Q 1875
Moore, Charles S., London, O 1874
Moore, Jehiel T., Tilsonburg, O 1874
Moore, Joseph, 1852
Moore Richard, 1853
Moore, Robert C., Exeter, O 1869
Moore, William, Owen Sound, O 1881
*Morin, Josh Hon, 1850
*Morrison, David R., 1869
Morrison, John, M.A., Waddington, N Y 1872
Mount, John W., Montreal 1851
Munro, Alexander, Montreal 1876
Munro, James T., Drummondville, O 1872
*Murray, Charles H., B.A., 1876
Neilson, W. J., Perth, O 1878
Nelles, Jas. M., Canton, Ill 1875
Nelles, John A., London, O 1850
*Nelson, Horace, 1861
*Nelson, Wolfred Hon, 1848
Nelson, Wolfred D. E., Panama, C A 1872
Nicol, William R., Watkins, N Y 1872
*Nicholls, Chs. R., Surgeon Major, Army 1862
Nesbitt, James A., Eureka, Nev 1868
Norton, Th mas, Horning's Mills, O 1874
Oakley, William D., Streetsville, O 1877
O'Brien, Thomas B. P., Srg. Maj. Army 1862
O'Brian, Robert S., Greenville, Q 1873
O'Brien, David, Renfrew, O 1873
O'Callaghan, Cornelius H., 1854
O'Callaghan, T. A., B.A., Worcester, Mass 1880
*O'Carr, Peter, 1857
*O'Connor, Daniel A., 1867
O'Dea, James Joseph, Long Island, U S 1859
Odell, William, 1849
O'Leary, James, St Pascal, Q 1866
O'Leary, Patrick, Montreal 1859
Oliver, James W., Clifton, O 1868
O'Reilly, Charles, Toronto, O 1867
Osler William, Montreal 1872
*Padfield, Charles W., 1868
Painchaud, Edward, S. L., Varennes, Q 1848
Palmer, Loran L., Toronto, O 1866
*Paquin, Jean M., 1843
*Paradis, Henri 1846
Paradis, Pierre E., Coaticooke, Q 1867
*Park, George A., 1877
Parker, Rufus S., Canton, Mass 1866
Parke, Charles S., Quebec 1866
*Paterson, James M., 1855
Paterson, James, Almonte, O 1864
*Pattee, George, 1858
Pattee, Richard P., Plantagenet, Q 1874
Pallen, Montrose A., New York 1864
*Patton, Edward K., 1867
Pegg, Austin J., Cayuga, O 1872
Pegg, Charles H, Chicago, Ill 1867
Perks, W. C., Port Hope, O 1881
Perrault, Victor, St Eustache, Q 1852
Perrier, John, Cleveland, Ohio 1868
Perrigo, James, M.A., Montreal 1870
Perry, H. R., Coteau Ldg, Q 1873
Phelan, C. J. R., Waterloo, Q 1865
Phelan, James B., London, O 1874
*Phelan Joseph P., 1854
Philip, David L., Brantford, O 1861
*Picault, A. C. E., 1852
Pickup, John W., Brockville, O 1867
Pinsoneault, B., Chicago 1880
*Pinet Alexis, 1840
Pinet, Alex R., St Laurent, Q 1867
Poole, H. E., Wakefield, Q 1880
Poussette A. Courthope, Sarnia, O 1860
Powell, Israel Wood, Victoria, B C 1860
* Powell, Newton W., Cobourg, O 1850
† Powell, Robert H. W., Ottawa 1876
Powers, George W., Eaton, Q 1861
Powers, Lafontaine B., Port Hope, O 1867
Pringle George, Northfield, Minn 1855
Pringle, A. F., Cornwall, O 1880
Prosser, Wm. O., Newington, O 1874
Proudfoot, John S., Susp'on Bridge, O 1868
Proudfoot, Alex., Montreal 1869
Proulx, Philéas, Terrebonne, Q 1844
*Prevost, E., Gilbert, 1859
Pulford, F. W., Stonewall, Man 1880
*Quarry, James J., 1868
*Quesnel, Jules M., 1849
Rea, John Hamilton (Hon), 1853
Rainville, Pierre, 1863
Rambault, J., Dept. Insp. Gen. Army 1859
*Rattray, Charles J., 1871
Rattray, James C., Cobden, O 1874
Raymond, Olivier, Montreal 1850
Read, Herbert H., Halifax, N S 1861
Redner, Horace P., Lonsdale, O 1864
Reddick, Robert, West Winchester, O 1874
Reddy, Herbert L., B.A., Montreal 1876
Reddy, John ad eun, Montreal 1856
Reed, Thomas D., Montreal 1871
Reed, John A., Bruce Mines, O 1871
Reid, Alex. Peter, Halifax, N S 1858
Reid, Kenneth, 38 W 26th st, New York 1864
Reynolds, T. W., Brockville, O 1881
Reynolds, Robert T., 1836
*Reynolds, Thomas, 1842
Richard, Marcel, 1864
Richmond, P. E., Mount Pleasant, Minn 1873
Ridley, Henry Thomas, Hamilton, O 1852
* Riell, Etienne R. E., 1857
Riley, Oscar H., Moer's Forks, Clinton Co, N Y 1874
Rinfret, Ferdinand R., Quebec 1868
*Rintoul, David M., 1859
Richardson, John R., Quebec 1865
Riordan, B. L., Allan's Line S S 1880
Ritchie, Arthur F., B.A., Duluth, Minn 1876
Ritchie, John L., Army Med. Dept. 1874
* Roberts, Edward T., 1859
Roberts, John E., B.A., Jamaica, W I 1867
Robertson, James E., Montague, P E I 1865
Robertson, David, Milton, O 1864

Robertson, David T., Lennoxville, Q 1857
Robertson, Patrick, St Andrews, Q 1867
Robillard, Adolphe, Ottawa 1860
Robinson, Stephen J., Brantford, O 1876
Robinson, Wesley, Markham, O 1872
Robitaille, Louis, New Carlisle, Q 1860
Robitaille, L. T., Quebec 1858
† Roddick, Thomas G., Montreal 1868
Rodger, Thomas A., Montreal 1869
Rogers, E. J. A., Peterboro, O 1881
Rogers, Amos, Ottawa 1874
Rooney, R. F., Colfax, Placer Co, Cal 1870
† Ross, George, M.A., Montreal 1866
Ross, G. T., Montreal 1880
Ross, Thomas, Woodlands, Ca 1863
* Ross, Henry, 1872
Ross, William G., Ashburt, New Z 1871
Ross, Wm. D., Buckingham, Q 1875
Ross, J. W., Winthrop, O 1881
Rugg, Henry C, Perth, O 1865
Rumsey, William, 1859
Rutherford, M. C., Kenyon, Minn 1879
Ruttan, Allen, Napanee, O 1852
Ruttan, A. M, Napanee, O 1880
* Sabourin Moïse, 1849
Sampson, James (Hon) 1847
Sanderson, George W., Orillia, O 1850
Savage, Thos. Y., Thistleton, O 1854
Savage, Alex. C., Ottawa 1866
* Sawyer, James H., 1863
* Schmidt, Samuel B., Montreal 1847
* Scholfield, David T., Welland, O 1854
Scott, John G., Hazeldean, Co Carlt, O 1879
Scott, Stephen A, 1854
Scott, Wm. E., Montreal 1844
Scott, Wm F, Hull, Q 1875
* Scriven, George Augustus, 1843
Seager, Francis R., Millbank, O 1870
Secord, Levi, Bright, O 1876
Setree, Edward W., Henvelton, N Y 1878
Seguin, André, Vaudreuil, Q 1848
Senkler, A. E., St Paul, Minn 1863
Serviss, T. W., Iroquois, O 1881
Seymour, M. M., Winnipeg, Man. 1879
* Sewell, Stephen C. (ad eun) 1843
Sewell, Colin (ad eun) Quebec 1869
Sharpe, Wm. James, South Toledo, Oh 1872
Shaw, W. F., Gravenhead, O 1879
Shaver, Peter Rolph, Stratford, O 1854
* Shaver, R N., 1857
Shepherd, Francis J., Montreal 1873
Sherk, George, Cheapside, O 1856
Shoebottom, Henry, Port Huron, Mich 1857
Shufelt, W. A., Brome, Q 1881
* Simard, Amable, 1852
Simpson, Thomas, Montreal 1854
Sinclair, Coll, Aylmer, O 1874
Small, H. B., Ottawa 1880
Smallwood, John R., St Clet, Q 1868
Smellie, T. S J., M.A., Pr Arthur's Ldg, O 1877
Smiley, J. S., Rawdon, Q 1880
* Smith, Daniel D, 1868
Smith, Daniel F., Walkerton, O 1878
Smith, E. H., Montreal, Q 1881
* Smith, Edward W., 1859
Smith, John, Emerson, Man 1879
Smith, Norman A., 1870
Smith, William, Lachute, Q 1876
Smythe, T. W., Colonel, 100th Regt 1848
Snider, Frederick S., Simcoe, O 1876
Sparham, Terence, Brockville, O 1841
Speer, Andrew M., Danville, Q 1874
Spencer, R., Montreal 1879
* Squire, William Wood, M.A., 1864
Stafford, Fred. J., Little Bay, Nfld 1878
Stanton, George, Simcoe, O 1868
Stark, George A., Milwaukee, Ohio 1872
* Staunton, Andrew, 1846
Stephen, William, Troy, N.Y. 1881
Stevens, Alex. D., Dunham, Q 1857
Stevenson, Charles N., Barnston, Q 1876
Stevenson, Hans, Chelsea, Q 1880
Stevenson, J. M, Bryanston, O 1856
Stevenson, John A., London, O 1873
* Stevenson, John L., 1855
Stevenson, Robert A., Strathroy, O 1871
Stewart, Alexander, Palmerston, O 1872
* Stewart, John Alexander, 1862
Stewart, James, Brucefield, O 1869
Stewart, J. O, Fairfax, Lynn Co, Iowa 1880
Stephenson, James, Iroquois, O 1850
Stimpson, Alfred O., Thompson, Pa 1868
St. John, Leonard, Chicago, Ill 1872
Storrs, Arthur, Cornwallis, N S 1876
* Strobridge, James Gordon, 1862
Stroud, Charles S., Norway, Benton Co, Iowa 1876
* Sutherland, Fred. Dunbar, 1861
Sutherland, Walter, Valleyfield, Q 1874
* Sutherland, William, 1835
* Sutherland, William, 1870
Sutherland, William R, Montreal 1879
Switzer, Egerton R., Salina, Ks 1865
Tabb, Silas E., M.A., Sherbrooke, Q 1869
* Tait, Henry Thomas, 1860
Taylor, Wm. H, Peterboro, O 1859
Taylor, Sullivan A, Gilmanton, N H 1870
Tew, Herbert S., Wakefield, York, Eng 1864
Temple, James A., Toronto 1865
Thayer, Linus O, Montreal 1859
* Theriault, F. D, 1863
Therien, Honoré, Bedford, Q 1863
* Thomson, James, 1842
Thompson, Robert, Montreal 1852
Tracey, A. W, West Meriden, Conn 1873
Trenholme, Edward Henry, Montreal 1862
Trudel, Eugène H., Montreal 1844
Trueman, J. E., Hampton, N B 1881
Turgeon, Louis G., Montreal 1860
Tuzo, Henry A., 1853
† Tunstall Simon J., B.A., St Anns, Q 1875
Ussher, Henry, Walkerton, O 1861
Vannorman, J. M., Detroit Mich. 1850
Vercoe, Henry L., Egmondville, O 1865
Vicat, John R, Melbourne, Q 1867
† Vineberg, Hiram N., Honolulu Sdw Isl 1878
Wagner, A. Dixon, Dickinson's Ldg, O 1872
Wagner, G. C., Dickinson's Ldg, O 1881
* Wagner, William H., 1844
Wakeman, William, Gaspé, Q 1866
Wales, Benjamin N., Buckingham, Q 1874
* Walker, Robert, 1851
Wallace, Isaac U., Milton Q 1874
Walsh, Edmond C, Madrid, N Y 1866
Walton, George O., Barbadoes W I 1873
Wanless, John R., Dunedin, New Z 1867
Ward, William T., Morristown, Minn 1873
Ward, Michael O'B., Montreal 1875
Warren, Frank, Brooklin, O 1872
* Warren, Henry, 1860
Waugh, William, London, O 1872
Weagant, C. A., Yarker, O 1879
Webb, James T. S., Montreal 1871
Webster, Arthur D., Edinburgh, S 1878
Weilbrenner, Remi Claude, Port Neuf, Q 1851

Weir, Richard, 1852
* Wherry, John, 1862
Whitecomb, Jo-iah G., Omaha 1818
Whiteford, James W., Winnipeg, Man 1873
Whiteford, Richard, Toledo, Ohio 1857
Whitwell, W. P. O., Philipsburg, Q 1860
Whyte, Joseph A., Sherbrooke, Q 1870
Wigle, Hiram, Wiarton, O 1875
* Widmer, Christopher Hon 1847
* Wilcox, Marshall B., 1868
Williams, J., London, O 881
Williston, H. V., M.A., Newcastle, N B 1879
Wilson, Benjamin S., Belleville, O 1866
Wilson, Robert M., 1850
Wilson, William, Ottawa 1857
* Wilscam, John Wilbrod, 1846
Wolverton, Algernon, B.A., Hamilton, O 1867
Woods, David, Staff Surgeon, Army 1860
Wood, George C., Coaticooke, Q 1849
Wood, George, Faribault, Minn 1863
Wood, Hannibal W., Knowlton, Q 1865
Woods, Jno. J. E., Aylmer, Q 1875
Woodful, Sam., Pratt. Surg Maj ½ Pay 1864
Woolway, C. J., St Mary's, O 1875
* Workman, Benjamin, 1853
Workman, Jo-eph, Toronto 1835
Worthington, Edward ad eun Sherbrooke, Q 1868
Wright, John W., B.A., Picton, O 1878
Wright, Henry P., Ottawa 1872
Wright, Stephen, Ottawa, O 1859
Wright William, Montreal 1848
Wye, John A., 80 Pitt St, Liverpool, Eng 1868
Young, Philip R., Clarenceville 1876
Young, Robert C., Ridgetown, O 1873
Youker, William, Stirling, O 1870

* Deceased.
† Holmes Medallist.

MASTERS OF ARTS.

(For Addresses see list of Bachelors of Arts and of App. Sci.

Allworth, Rev. John B.A 1875
Amaron, Rev. Calvin E, B.A.....1880
Archibald, John S., B.A.....1877
* Bancroft, Rev. Charles (ad eun)..1856
Bancroft, Rev. C., Junior, B.A.....1870
Baynes, Donald, B A.....1867
Bethune, Meredith Blenkarne, B.A..1869
* Bothwell, John A, B.A 1868
Bowman, Wm. M.....(Hon).....1859
Boyd, John, B.A.....1864
* Butler, Rev. John.....(Hon).....1852
Cameron, Rev. James, B.A.....1874
Carmichael, Rev. J., B.A 1871
Chamberlin, Browne, B.C.L. (ad eun).....1857
Chandler, George H., B.A.....1879
Chapman, Rev. Charles, M.A., London Univ. (ad eun).....1872
Clarke, Wallace, B.A., M.D.....1872
Clowe, John D., B.A.....1874
Cornish, Rev. George, B.A.....1863
Crothers, Rev. William J., B.A.....1875
Cushing, Lemuel, B.A., B.C.L.....1867
Dart, William J., B.A.....1874
Davidson, Rev. James, B.A 1866
Davidson, Charles P., B.A., B.C.L..1867
Davidson, Leonidas H., B.A.....1867
Dawson, William B., B.A.....1879
Dey, Rev. William J., B.A.....1875
DeWitt, Caleb J., B.A.....1864
Dickson, George, M.A., Victoria Col. (ad eun).....1879
Dougall, John Redpath, B.A.....1867
Duff, Rev. Archibald, B.A.....1867
Duncan, Alexander E., B.A.....1875
Ells, Robert, B.A.....1875
Empson, Rev. John, B.A.....1879
Forneret, Rev. George A, B.A.....1880
* Gibb, George D., M.D...(Hon).....1856
Gibson, Thomas A.....(Hon).....1856
Gilman, Francis E., B.A.....1865
Gould, Edwin, B.A.....1860
Graham, John H.....(Hon).....1859
Green, Joseph, B.A.....1864
Haight, Frederick S., M.A. Williams Coll. (ad eun).....1881
Hall, Rev. Wm., B.A.....1867
Hart, Lewis A., B.A.....1869
Hicks, Frank W., B.A.....1870
Hindley, Rev. John, B.A.....1873
Howe, Henry Aspinwall...(Hon).....1855
Jones, Montgomery, B.A.....1873
Kahler, Frederick A., B.A.....1872
Kemp, Rev. Alexander F...(Hon)....1863
Kennedy, George T., B.A.....1872
Kennedy, Rev. John, B.A.....1860
Kirby, James, B.A., B.C.L.....1862
Krans, Rev. Edward H., B.A.....1875
Laing, Rev. Robert, B.A.....1877
* Leach, Robert A., B.A., B.C.L.....1860
Lyman, Henry H., B.A 1880
Lyman, A. Clarence, B.A.....1881
McCord, David R., B.A., B.C.L.....1867
McGregor, Duncan, B.A.....1874
McGregor, James, B.A.....1868
* McIntosh, John, B.A.....1873
McLaren, John R, B.A.....1868
McLennan, Rev. Duncan H., B.A....1875
Markgraf, Charles F. A...(Hon).....1865
Mason, James L., B.A 1863
Mattice, Corydon J., B.A 1862
Morris, Alex., B.A., B.C.L.....1852

Morrison, Rev. James D., B.A.....1868
Morrison, John, B.A.....1870
Munro Rev Gustavus, B A.....1874
* Perkins, John A., B.A.....1862
Perrigo, James, B.A.....1869
* Plimsoll, Reginald J., B.A.....1867
Ramsay, Robt. A., B.A., B.C.L.....1867
Robins, Sampson Paul, B.A.....1868
* Rodger, David.....(Hon).....1856
Ross, George, B.A., M.D.....1866
Roy, Rev. James, M.A., Victoria Col. (ad eun).....1879
Shaw, Rev. W. J., M.A., Victoria Col. (ad eun).....1880
* Stewart, Rev. Colin Campbell, B.A. 1870
Sweeny, James F., B A.....1881
Tabb, Silas Everett, B A.....1869
Thorburn, John.....(Hon).....1861
Trenholme, Norman W., B.A., B.C.L. 1867
Torrance, Rev. Edward F., B A.....1874
Wallace, Rev. R. W., B.A.....1875
Ward, George B., B.A.....1880
Wicksteed, Richd. M., B.A., B.C.L. 1866
* Wilkie, Daniel.....(Hon).....1869
Wilson, John, B.A.....1870
Wotherspoon, Ivan Tolkein, B.A.....1869

* Deceased.

MASTERS OF ENGINEERING.

Dawson, William B., B.A., Ba. App. Sci.....1880
McLeod, Clement H., Ba. App. Sci.....1878

BACHELORS OF CIVIL LAW.

* Abbott, Christopher C..... 1850
Abbott, Harry, 11 Hospital St. Montreal. 1878
Abbott, John J. C., 11 Hospital St. Montreal..... 1854
Abbott, John B., 11 Hospital St. Montreal..... 1874
Adam, Joseph, 38 St. James St. Montreal..... 1878
Adams, Abel, Waterloo..... 1867
Allan, Irvine..... 1862
Alguire, J. C., Montreal..... 1880
‡ Archibald, John Sprott, M.A., 112 St. François Xavier St. Montreal..... 1870
Archambault, Henri..... 1874
Archambault, Joseph L. C., 488 Craig St. Montreal..... 1871
Armstrong, Louis, 11 St. James St. Montreal..... 1861
Ascher, Isidore G., Montreal..... 1863
‡ Atwater, Albert W., Montreal..... 1880
Austin, Joseph E., Montreal..... 1880
Aylen John, M.D., Aylmer, Q..... 1861
Aylen, Peter, B.A..... 1854
Aylmer, Henry, Hon., jun., Melbourne, Q..... 1881
* Badgley, Frank H..... 1852
Bagg, Robert Stanley Clark, 19 St. James St. Montreal..... 1871
Bampton, Geo. E., Lachute..... 1879
Barnston, John G., Manitoba..... 1856
Barry, Denis, 6 St. James St. Montreal. 1872
Baynes, Edward Alfred, McGill College. 1867
Baynes, O'Hara, 11 Hospital St. Montreal..... 1874
Baudin, Siméon, 44 St. Vincent St. Montreal..... 1878
Beauchamp, Joseph, 89 St. James St. Montreal..... 1878
Bergeron, Horace, Beauharnois, Q..... 1877
Benjamin, Lewis N., 162 St. James St. Montreal..... 1863
Beaubien, Nap. H., Yamachiche, Q.... 1877
Berthelot, Louis H., 7 Beaver Hall Sq. Montreal..... 1878
Berthelot, Joseph B., Montreal..... 1880
‡ Bethune, Meredith B., M.A., 11 St. Sacrament St. Montreal..... 1869
Birny, Jean B. S., Montreal..... 1880
Bisaillon, François Joseph, 11 Place d'Armes Hill, Montreal..... 1876
Bissonnette, Louis A., 36 St. Vincent St., Montreal..... 1878
* ‡ Bothwell, John A., B.A..... 1866
Bouthillier, Charles F., 57 Union avenue Montreal..... 1867
Boyd, John, B.A., Toronto..... 1864
Bowie, Duncan E., Montreal..... 1873
Brakenridge, James W., Montreal..... 1880
Branchaud, Athanase, 14 St. James St. Montreal..... 1862
Brooke, C. J., Richmond, Q..... 1878
Bullock, Wm. E., B.A..... 1863
Busteed, E. B., 273 Bleury St. Montreal..... 1879
Butler, Thomas P., 34 St. James St. Montreal..... 1865
Calder, John, 67 St. Sulpice St. Montreal..... 1871
Capsey, George, Bedford, Q..... 1877
Carden, Henry..... 1860
Caron, Adolphe P., Quebec..... 1865
Carter, Christopher B., 103 St. François Xavier St. Montreal..... 1866
Carter, Edward, Q.C., Montreal..... 1864
Carter, George F., 31 Cadieux St. Montreal..... 1879
Chamberlain, Brown, Ottawa..... 1850
Chamberlain, John, jun..... 1867
Chambers, A. Busteed, Napanee..... 1875
Charland, Alfred..... 1863
Charette, Pierre P., Montreal..... 1877
Chauret, Amédée, Montreal..... 1873

Chauveau, Alexandre, Quebec..... 1867
Choquette, Frs. X..... 1874
Choquet, Ambroise, 42 St. Sulpice St. Montreal..... 1865
Cornell Z. E., 112 St. François Xavier St. Montreal..... 1879
Couillard, Edouard, 56 St. Gabriel St. Montreal..... 1875
Couillard, Jean B..... 1866
Coutlée, Lewis W. P., Hull, Q..... 1873
Conroy, Robert Hughes, Aylmer..... 1869
Cooke, Joseph P., Montreal..... 1880
Cowan, Robert C., 235 St. James St. Montreal..... 1862
Creighton, J. G. Aylwin, Montreal..... 1880
* Crimmen, W. J..... 1878
Cross, A. S., 182 St. James St. Montreal..... 1878
Cross, Alexander, Ormstown, Q..... 1881
Crothers, Robert A., B.A., Bedford, Q. 1878
Cruikshank, William G., 60 St. James St. Montreal..... 1872
Curran, Joseph C..... 1862
Cushing, Charles, 110 St. James St. Montreal..... 1869
*Cushing, Lemuel, jun., M.A..... 1865
Daly, J. G..... 1858
Dansereau, Arthur, Montreal..... 1865
Dansereau, Clément, 62 St. Hubert St. Montreal..... 1877
Darby, Daniel, Waterloo..... 1870
Darey, Pierre J., M.A., Montreal..... 1868
David, Alphonse, 186½ Notre Dame St. Montreal..... 1872
Davidson, Charles P., M.A., 182 St. James St. Montreal..... 1863
Davidson, Leonidas Heber, M.A., 217 St. James St. Montreal..... 1864
Day, Edmund T., 192 Notre Dame St. Montreal..... 1863
De Beaumont, Alfred L., Montreal.... 1880
Decary, Aldéric, 188 St. Denis St. Montreal..... 1879
De Martigny, Charles L., Montreal.... 1880
De Martigny, Alphonse L., Varennes, Q 1881
Desaulniers, Alexis L..... 1861
Desaulniers, Henri Lesieur, Montreal. 1864
Desaulniers, Dionis, 223 Notre Dame St. Montreal..... 1876
Desmarais, Odilon, St. Hyacinthe..... 1876
Des Rivières, Rodolphe, 15 St. Vincent St. Montreal..... 1875
Desrochers, Jean L. B..... 1863
Des Rosiers, Joseph, 221 St. Lawrence St. Montreal..... 1873
Doak, George O., Coaticook, Q..... 1863
‡ Doherty, Charles J., 50 St. James St. Montreal..... 1876
Doherty, Thomas J., 50 St. James St. Montreal..... 1868
Dorion, Adelard A. L., 160 Notre Dame St. Montreal..... 1862
Dorion, Louis C. W., 24 St. James St. Montreal..... 1877
Doré, Pierre J., Laprairie..... 1880
* Doutre, Gonzalve..... 1861
Doutre, Pierre..... 1858
Downie, D., Montreal, Q..... 1880
Driscoll, Netterville H., 64 St. James St. Montreal..... 1861
* Drummond, William D..... 1867
Dubuc, Joseph, Manitoba..... 1869
Duchesnay, Henri J. T., Beauce, Q.... 1866
Duffy, Henry T., B.A., Sweetsburg, Q. 1878
Dugas, François O., Montreal..... 1880
Duncan, Alexander E., B.A., 19 Shuter St. Montreal..... 1879
Dunlop, John, 12 Hospital St. Montreal..... 1860
Duprat, Pierre N..... 1866
Durand, Naphtalie, 67 St. Sulpice St. Montreal..... 1864
Ethier, Léandre, 352½ Lagauchetière St. Montreal..... 1879
Ethier, Marc, 25 St. Gabriel St. Montreal..... 1877
Faribault, Joseph E., L'Assomption, Q. 1878
Farmer, Wm. O., Montreal..... 1866
Fay, John E., Knowlton, Q..... 1878
Fisher, Roswell C., Knowlton, Q..... 1869
Fisk, John J., Coaticooke..... 1868
Fleet, Charles J., B.A., 28 St. François Xavier St., Montreal..... 1879
Foran, Thomas P., 178 St. James St. Montreal..... 1870
Forget, Adélard, 64 St. Gabriel St. Montreal..... 1877
Forster, Joseph L., Montreal, Q..... 1881
Foster, George G., Knowlton, Q..... 1881
Franks, Albert W..... 1871
* Gardiner, William F..... 1856
Galarneau, Joseph Antoine..... 1864
Galbraith, William, Kingston, O..... 1875
Garon, Alphonse P..... 1877
Gaudet, Oscar, 160 Notre Dame St. Montreal..... 1878
Gauthier, Antoine N., Sault au Recollet, Q..... 1881
Gauthier, Zéphirin, Sorel, Q..... 1859
Gelinas, A., Manitoba..... 1876
Geoffrion, Christopher A., 24 St James St. Montreal..... 1866
Gibb, James R., Montreal..... 1868
Gilman, Francis E., M.A., 199 St. James St. Montreal..... 1865
Girouard, Désiré, 56 St. François Xavier St. Montreal..... 1860
Glass, James M., 67 St. François Xavier St. Montreal..... 1876
‡ Gordon, Asa, Aylmer, Q..... 1867
Gosselin, Jean, Quebec..... 1877
‡ Goodhue, Henry S. W. (West Indies)..... 1877
Goyette, Henri A., Beauharnois, Q.... 1880
Grahame, Dugald, 1134 Dorchester St. Montreal..... 1878
‡ Greenshields, James N., 181 St. James St. Montreal..... 1876
Grenier, Amédée L. W..... 1863
Guerin, Edmund W. P., B.A., Montreal, Q..... 1881
Hackett, Michael F., Stanstead..... 1874
Hall, John S., B.A., 34 St. James St. Montreal..... 1875
Hall, William A., 34 St. James St. Montreal..... 1863
Hammond, Henry R., Chatham..... 1880
Harnett, Wm. de Courcy, City Hall, Montreal..... 1870
Hart, Lewis A., M.A., 194 St. James St. Montreal..... 1869
Hemming, Edward J., Arthabaska 1855
‡ Hodge, David W. R., B.A., Sher-

brooke, Q..... 1874
Holton, Edward, 199 St. James St. Montreal..... 1865
Houghton, John G. K..... 1863
Howard, Rice M., Winnipeg..... 1869
Houliston, Alexander, Three Rivers... 1865
Hunter, Herbert S., Montreal..... 1880
* Huntington, Russ Wood..... 1875
‡ Hutchinson, Matthew, Montreal..... 1873
Ingalls, Allen G., Granby, Q..... 1881
Jackson, Samuel W., Montreal, Q..... 1881
Jenkins, George E., 37 Mackay St. Montreal..... 1874
Jodoin, Isaïe..... 1858
Johnson, Edwin R., Stanstead, Q..... 1866
Jones, Richard A. A., B.A., Montreal. 1864
Joseph, Joseph O., 33 St. Gabriel St. Montreal..... 1864
Kavanagh, H. J., 117 St. François Xavier St. Montreal..... 1878
Keller, Francis J., 178 St. James St. Montreal..... 1869
* Kelly, John P..... 1862
Kemp, Edson, B.A., 235 St. James St. Montreal..... 1859
Kenny, Wm. R., Aylmer, Q..... 1865
Kirby, James, M.A., 19 St. James St. Montreal..... 1862
Kittson, George R. W., 60 St. James St. Montreal..... 1867
Knapp, Frederic A., 17 St. John St. Montreal..... 1877
Labadie, M. T., Adolphe, Montreal.... 1874
Labadie, Y. A. Odilon, Montreal..... 1874
Lacoste, Arthur, Montreal..... 1869
Laflamme, R. G., Montreal..... 1856
Laflamme, Leopold, 42 St. James St. Montreal..... 1869
Lafleur, Eugene, B.A., Montreal..... 1880
* Lafrenaye, P. R..... 1856
Lambe, William B., 353 Notre Dame St. Montreal..... 1850
Lanctot, Husmer, 3 Place d'Armes Hill Montreal..... 1878
Lanctot, Médéric, 69 Upper St. Urbain St. Montreal..... 1860
Lane, C., B.A., Montreal..... 1881
Laplante, Jean Baptiste, St. Stanislas. 1880
Lareau, Edmund (ad eun), Montreal... 1874
Larivière, Joseph..... 1874
Larose Telesphore..... 1860
Lassalle, Lucien, 6 St. James St. Montreal..... 1877
Laurier, Wilfred, Arthabaskaville, Q.. 1864
Laviolette, Pierre B., 16 St. Vincent St. Montreal..... 1878
* Lay, Warren Amos..... 1867
Lawlor, Richard S., Aylmer, Q..... 1865
Leach, David S., Montreal..... 1861
* Leach, Robert A., M.A..... 1860
Lebœuf, Louis C., 57 St. Gabriel St. Montreal..... 1873
Leblanc, Albert, 23 St. Denis St. Montreal..... 1879
Ledieu, Léon, 1 St. Pierre St., St. Henri., Montreal..... 1879
Lefebvre, Frederic, 6 St. James St. Montreal..... 1863
Lebourveau, Steadman A., 63 St François Xavier St. Montreal..... 1876
Leet, Seth P., 163 St. James St., Montreal..... 1879
Lighthall, W. D., B.A., Montreal, Q... 1881
Levy, J. C. E., 20 St. Louis St. Montreal..... 1878
Lonergan, James, 34 St. James St. Montreal..... 1873
Lonergan, Michael L. S., 151 St. James St. Montreal..... 1871
Loranger, Louis George..... 1863
Lyman, Albert, B.A., Montreal, Q..... 1881
Lyman, Elisha Stiles..... 1865
Lyman, Frederick S., B.A., 12 Hospital St. Montreal..... 1869
‡ Lynch, Wm. W., Quebec..... 1868
Mackenzie, Fred., 5 Prince of Wales Terrace, Montreal..... 1861
Madore, Camille, Notre Dame de Grace 1880
‡ Major, David, 61 St. Gabriel St. Montreal..... 1875
Major, Edward James, 403 Guy St. Montreal..... 1871
‡ Marler, Wm. De M., B.A., 115 St. François Xavier St. Montreal..... 1872
Martineau, Paul G., 84 Champlain St. Montreal..... 1879
McCord, David Ross, M.A., 131 St. James St., Montreal..... 1867
McCorkill, John C. G. S., 178 St. James St. Montreal..... 1877
McCormack, Duncan L., 112 St. François Xavier St. Montreal..... 1871
McDonald, Frank H..... 1873
McDonald, John S..... 1876
McDougall, John W. C., Three Rivers, Q..... 1877
McFee, Kutusoff N., B.A., Montreal .. 1880
* McGee Thos. d'Arcy..... 1861
McGibbon, R. D., B.A., 103 St. François Xavier St. Montreal..... 1879
McGoun, Archibald, B.A., 1383 St. Catherine St. Montreal..... 1878
* McIntosh, John, B.A..... 1868
McKercher, John, Montreal..... 1880
* McKinnon, Edmund..... 1878
Maclaren, John J., 163 St. James St. Montreal..... 1868
McLaren, John Robert, M.A., 525 Sherbrooke St. Montreal..... 1859
* McLaurin, John Rice..... 1867
McLean, B. C., 19 St. Monique St. Montreal..... 1879
McLennan, William, Montreal..... 1880
McMahon, Edward M., Montreal, Q... 1881
‡ MacMaster, Donald, 181 St. James St. Montreal..... 1871
* McNaughton, Peter J..... 1879
Merry, John Westley, Sherbrooke, Q.. 1870
Messier, Damase, 56 St. Gabriel St. Montreal..... 1875
Messier, Joseph S., St. John, Q..... 1868
‡ Mignault, Pierre B., 36 St. Vincent St., Montreal..... 1878
Mitchell, Albert Ed., Sweetsburg, Q... 1867
Molson, Alexander, 101 St. François Xavier St. Montreal..... 1851
Monk, Ed. Cornwallis, 182 St. James St. Montreal..... 1870
Monk, Frederick, 89 St. James St. Montreal..... 1877
Morrin, Pierre A., Montreal..... 1878
Morris, Alexander, M.A., Toronto, O.. 1850
Morris, John L., 40 St. John St. Montreal..... 1859
Morrison, Adelard, Napierville, Que... 1878
* Nagle, Sarsfield B..... 1862

‡Nicholls, Armine D., B.A., 48 Victoria St. Montreal 1879
Nichol, Thomas, M.D., LL.B., 137 Bleury St. Montreal 1875
Nutting, Charles A., Montreal 1872
Ouimet, Adolphe P., 332 Lagauchetière St. Montreal 1861
Oughtred, Allan R., Sheridan, Ont. 1881
Painchaud, Joseph, Montreal 1880
Palliser, Joseph, 17 St. John St. Montreal 1877
Panet, Edouard A 1874
Papineau, Joseph G., 32 St. James St. Montreal 1869
Parisault, Chs. Ambroise 1859
Pelletier, Louis C., 446 Mignonne St. Montreal 1877
Perras, F. X., 4 St. James St. Montreal 1878
Perry, Joseph, New Orleans 1869
*Perkins, John A., M.A 1860
Perodeault, Narcisse, 5 St. Thérèse St. Montreal 1876
Piché, Aristide 1868
Pillet, J. Henri, Court House, Montreal 1879
*Plimsoll, Reginald J., M.A 1861
Polette, William A., Montreal, Q. 1881
Poutré, Félix E., Montreal 1874
Power, Alexander W. A., Ottawa 1868
Prefontaine, Raymond, 14 St. James St. Montreal 1873
Purcell, John D., 146 St. James St. Montreal 1877
Rainville, Henri Benjamin, 43 St. Gabriel St. Montreal 1873
Ramsay, Robert A., M.A., Merchants' Exchange, 11 St. Sacrament St. Montreal 1866
Raynes, Charles, B.A., Montreal, Q. 1881
Reddy, Wm. B. S., Montreal 1880
Redpath, Wm. W., B.A., Montreal, Q. 1881
Ricard, Damase F. J. 1859
Richard, Emery Edward, Battleford, N.W.T. 1867
Richard, Edward E 1868
Ritchie, Wm. F., B.A., 660 Sherbrooke St. Montreal 1879
Rixford, Em. Hawkins, San Francisco. 1865
Robidoux, J. Emery, 10 St. James St. Montreal 1866
Robillard, Emile 1874
Rochon, Charles A., 212 Notre Dame St. Montreal 1861
Rose, William, London, England 1866
Ross, Walter Lord, 11 Hospital St. Montreal 1879
Rutherford, Alex. C., Woodstock, Ont. 1881
Sabourin, Ernest 1863
Santoire, Camille, Montreal 1863
Sarrasin, Ferdinand Léon, 16 St. Vincent St. Montreal 1871
Scallon, William, Montreal 1876
Sexton, James Ponsonby, 59 St. François Xavier St. Montreal 1860
Sharp, W., Prescott, Montreal 1880
Short, Robert, Richmond, P.Q. 1867
Sjostrom, Paul R. D., Sherbrooke, Q. 1881
Smith, Robert C., Montreal, Q. 1881
Shortiss, James, Three Rivers, Q. 1881
Sicotte, Victor B., Cadastre Office, Montreal 1862
Snowdon, H. L., 67 St. François Xavier St. Montreal 1856
Spong, John J. R., Montreal 1874
St. Jean, Edmund R., Montreal 1879
Stephens, Charles Henry, Montreal 1875
Stephens, George W., Merchants' Exchange, Montreal 1863
Stephens, Romeo H., 56 St. François Xavier St. Montreal 1850
Stephens, Chas. O 1864
Taché, Pascal, Montreal 1876
Tait, Melbourne, Montreal 1862
Taschereau, Arthur, Quebec 1864
Taylor, A. Dunbar, B.A., Montreal 1878
Taylor, Reid, Montreal 1869
Terrill, Joseph Lee, Stanstead, Que. .. 1865
Torrance, Fred. W., M.A., Montreal .. 1856
Trenholme, Edward H., M.D., Montreal 1865
‡Trenholme, Norman W., M.A., Montreal 1865
Trudel, Bouthillier J., 75 Dubord St. Montreal 1879
Vandal, Philippe, 58 St. François Xavier St. Montreal 1861
Vilbon, Chas. A., 44 St. James St. Montreal 1863
Walker, William G., 112 St. François Xavier St. Montreal 1874
*Walsh, Thomas Joseph 1860
Watts, William J., B.A., Drummondville, P.Q 1869
Weir, Robert S., Montreal 1880
Weir, William A., Montreal, Q. 1881
*Welsh, Alfred 1864
Wicksteed, Richard M., M.A., Ottawa.. 1868
Wight, James H 1868
Wood, Franc Ogilvie, 146 St. James St. Montreal 1870
Wotherspoon, Ivan T. (Laval) [ad eun] 11 Hospital St. Montreal 1868
Wright, William Mackay, B.A., Hull.. 1863
Wurtele, Charles J. C., Sorel, P.Q. 1863
Wurtele, Jonathan S. C., Montreal 1870

*Deceased. ‡Elizabeth Torrance Medallists.

BACHELORS OF ARTS.

Allan, James G., (†Ⓔ), Lockport, N.S. 1873
Allan John, (Ⓝ) Leeds, Q 1874
Allen, Frank A., Huntingdon, Q. 1880
Allworth, John 1872
Amaron, Calvin E., (ΦΣ), Three Rivers, Q 1877
Anderson, Jacob de Witt, (†Ⓒ) 1866
Anderson, James A., Montreal 1877
Archibald, John Sprott, (†Φ) Montreal 1867
Atwater, Albert W., Montreal 1877
Aylen, Peter, B.C.L., Aylmer, Ont. 1850
Bancroft, Rev. Chas., junior, M.A., Knowlton, Q 1866
Barnston, Alexander, (†) 1857

Bayne, George D., Montreal..... 1880
Baynes, Donald, Canterbury, Eng 1864
Beckett, William Henry..... 1866
Bennett, James, Montreal..... 1880
Bethune, Meredith Blenkarne, (†N), Montreal..... 1866
Black, Chas., Granby, Q..... 1881
Black, James R..... 1874
Blackader, Alex. D., (N), Montreal.... 1870
Blakely, Malcolm D., Montreal..... 1878
Bland, Salem G., (Morrin), Montreal .. 1877
Bockus, Charles E..... 1852
*Bothwell, John A., (†N)..... 1864
Boyd, John, (N 2)..... 1861
Bracq, John C., (P 2) Grand Ligne, Q 1881
Brewster, William, († C)..... 1865
Brooks, Charles H., († N) Smyrna 1868
Browne, Arthur Adderly, († E), Montreal 1866
Brown, Thomas..... 1853
Bull, Harcourt J., († P), Montreal..... 1880
Bullock, William E., († C), Millbrook, O 1860
Cameron, James, M.A., († M)..... 1871
Carmichael, James, Markham, Ont.... 1867
Cassels, Hamilton, (Morrin), Millichamp's Building, Adelaide St., Toronto..... 1873
Cassels, Robert, (Morrin) (P) Ottawa.. 1866
Chandler, George H., († M), 32 Lorne Avenue, Montreal..... 1875
Chipman, Clarence, Prescott, O..... 1866
Chubb, Sydney C., (N 2), Brooklyn, N.Y..... 1877
Christie, John H., Lachute..... 1872
Clark, Wallace, († E)..... 1869
*Cline, John D., († C)..... 1871
Clowe, John D 1863
Cook, Archibald H., (Morrin) Quebec.. 1869
Cornish, Rev. Geo., B.A., London Univ. (ad eun) Montreal..... 1856
Cox, Jacob W., Noel, Hants Co., N.S.. 1876
Craig, James A., (P 2) Fitzroy, O 1880
Craig, James, Renfrew, O..... 1874
Cross, Alexander S., († P), Montreal... 1879
Crothers, W. J., (P 2), Phillipsburg, Q 1872
Crothers, Robt. A., († C), Bedford, Q .. 1876
Coussirat, Rev. Adrian D., (ad eun).... 1871
Cunningham, Thomas E., (P 2), Montreal..... 1880
Currie, Dougald, (E), Crinan, O..... 1880
* Cushing, Lemuel, (C)..... 1863
Darey, J. Herbert, († C), Montreal..... 1880
Dart, William J., Laprairie..... 1868
Davidson, Charles Peers, Montreal 1863
Davidson, Rev. Jas., (ad eun), Montreal 1863
Davidson, Leonidas Heber, Montreal.. 1863
Dawson, William B., († N), Montreal.. 1874
Dawson, Rankine, (P 2), Montreal.... 1878
Dewey, Finlay McN. (P 2), Richmond, Q 1874
Dey, William J., (N), Spencerville, O.. 1871
DeWitt, Caleb S., Lockport, Ill., U.S.. 1861
Donald, James T., († N), Montreal..... 1878
Dougall, Duncan, Windsor, Ont 1860
Dougall, John Redpath, Montreal..... 1860
Drummond, Chas. G. B., (N), Montreal 1862
Duclos, Charles A., (Morrin) Quebec... 1881
Duff, Archibald, († M), Airedale College, Yorkshire, Eng..... 1864
Duffy, Henry T., (E 2), Bedford 1876
Duncan, Alexander E., Montreal..... 1867
Eadie, Robert, († C), Oakland, O..... 1879
Elder, John, († P) Huntingdon, Q. 1881
Ells, Robert, († N), Montreal..... 1872
Empson, John, 71 University St., Montreal 1874
Ewing, William, Winnipeg, Manitoba . 1878
Fairbairn, Thomas, (P 2)..... 1863
Falconer, Alex., († E) Montreal.. 1881
Ferguson, James D., (Morrin), Quebec. 1880
Ferguson, John S., Montreal 1861
Ferguson, Wm. A., († M) Richibucto, N.B 1881
*Ferrier, Robert W..... 1857
Fessenden, Elisha Joseph, Chippawa, O 1863
Fleet, Charles J., (E), Montreal..... 1872
Forneret, Geo. A., Dunham Flats..... 1877
Fortin, Rev. Octave, (ad eun), Winnipeg, Man..... 1867
Fowler, William, (N) 1865
Fowler, Elbert..... 1868
Fraser, John, (Morrin)..... 1869
Gamble, Robt., Billings Bridge, Ont... 1881
Gibb, Charles, 80 Aylmer St., Montreal 1865
Gilman, Francis Edward, Montreal.... 1862
Gore, Frederick..... 1861
Gould, Charles H., († C), Montreal..... 1877
Gould, Edwin, Montreal..... 1856
Graham, John, († E), Williamstown, O 1876
Graham, John H., Ormstown, Que..... 1878
Grandy, John, Millbrook, Ont..... 1866
Gray, William, Union Theological Sem., New York..... 1876
Greenshields, Edward, († P), 305 Peel St., Montreal 1869
Greenshields, Samuel, 90 Union Av., Montreal..... 1874
Green, Joseph, († C), 600 West 5th St., Cincinnati, Ohio, U.S..... 1861
Green, Lonsdale, 118 Leadenhall St., London, E. C., Eng 1864
Guerin, Edmund W. P., († E), 692 Craig St., Montreal 1878
Hall, John S..... 1874
Hall, Rev. William, 30 Fort St., Montreal..... 1861
Hart, Lewis A., Montreal..... 1866
Harrington, Bernard J., († N), Montreal 1869
Harvey, Alfred, St. John's, Newfound. 1874
Harvey, Charles J., St. John's, Newfoundland..... 1874
Hemming, Henry, (Morrin), Quebec... 1880
Hicks, Frank W., Montreal..... 1864
Hindley, John, Montreal 1868
Hodge, D. W. R., († E), Sherbrooke, Q. 1872
Holiday, Caleb S., Lachute, Q 1870
Howard, Robt. J. B., († N), Montreal.. 1879
Jones, Montgomery, (E), Hatley, Q ... 1869
Johnston, Rev. Jas. A., († P), Rutland, Vermont 1870
Joseph, Montefiore, (N), Quebec..... 1870
Kahler, Frederick A., († C), Germantown, Phil., U.S 1869
Keays, Charles H., Hamilton, Ont..... 1880
Kelley, Frederick W., († E), Montreal. 1871
Kemp, Edson, Montreal 1859
Kennedy, Geo. T., (N), Wolfville, N.S. 1868
*Kershaw, Philip G 1867
Kirby, James, (†), Montreal..... 1859
Klock, Robert A., Aylmer, P.Q..... 1880
Krans, Edward H., († E), N. York..... 1865
Lafleur, Eugene, († P), Montreal 1877
Lafleur, Paul T., († E), Montreal..... 1880
Laing, Robert, († P), Halifax, N.S..... 1868
Lane, Campbell, 293 Peel St. Montreal. 1879
Lariviere Vitalien, Roxton Falls, Q.... 1880
* Leach, Robert A..... 1857
Lewis, Albert R., (E)..... 1869

Lighthall, William D., († E), Montreal. 1879
Lyman, A. Clarence, Montreal..... 1878
Lyman, Henry H., († N), Montreal..... 1876
Lyman, Frederick Stiles, Montreal.... 1863
Lyman, Walter E., (M L 2), Montreal. 1881
Major, George W., 1398 St. Catherine St. Montreal..... 1870
Marler, Wm. de M., († M), Montreal.. 1868
Mason, James L..... 1859
Matheson, John, Presbyterian College, Montreal..... 1876
Mattice, Corydon J., Cornwall, O..... 1859
Maxwell, John, (N), L'Orignal, O..... 1872
McClure, Wm., († N), Oshawa, O..... 1879
McConnell, Richard G., (N), Montreal. 1879
McCord, David Ross, Montreal..... 1863
McDonald, Hector C., Flat River, P.E.I..... 1881
MacDonnell, Richard L., († C), Montreal 1873
MacDuff, Alexander Ramsay..... 1866
McFadyen, Allan L., Montreal..... 1878
McFee, Kutusoff N., († P), 30 St. Famille St. Montreal..... 1874
McGibbon, Robert D., Montreal..... 1877
McGoun, Archibald, († P), Montreal.. 1876
McGregor, Archibald F., Listowell, O.. 1877
McGregor, James, (C), Montreal..... 1864
McGregor, Duncan, Guelph, O..... 1871
* McIntosh, John, († E)..... 1870
McIntyre Hector A., Manilla, O..... 1881
McKenzie, John, (Morrin) 1867
McKenzie, Robert, (P)..... 1869
McKenzie, Wm. A., (C), Lanark, O.... 1881
McKibbin, William M., Edwardsburg, O 1875
McKibbin, Robert, Edwardsburg, O... 1879
McKillop, Ronald, Inverness, Q..... 1878
McLaren, David C., Montreal..... 1878
McLaren, John R., 525 Sherbrooke St., Montreal..... 1856
McLaren, Harry, († 67 Mansfield St., Montreal..... 1858
McLean, Neil W., (Morrin) (P 2)..... 1866
McLean, Bredalbane S., Montreal..... 1869
McLennan, Duncan H., Alexandria, O. 1871
McLennan, John S., (P), 317 Drummond St. Montreal..... 1874
McLeod, Arch., Orwell, P.E.I..... 1881
McLeod, Duncan C., († M), Charlottetown, P.E.I..... 1873
*McLeod, Hugh..... 1866
McLeod, Findlay J., Winnipeg, Man... 1872
McNabb, Robt., Woodville, O..... 1881
*McOuat, Walter, (N)..... 1865
Macpherson, Kenneth R. († N), Montreal 1881
Mercer, Walter D., Montreal..... 1880
Merritt, David, Prescott..... 1863
Molson, Charles A., († N), Montreal ... 1880
Moore, Francis X..... 1868
Morris, William, Montreal..... 1859
Morris, Alexander, Toronto, O..... 1849
Morrison, John..... 1866
Morrison, James D., († N), Ogdensburg, N.Y..... 1865
Morrison, David W., (E), Ormstown, Q 1870
Muir, Andrew C., N. Georgetown, Q... 1880
Muir, John F..... 1864
* Muir, Rev. E. P., (ad eun)..... 1865
Munro, Gustavus, Embro, Ont..... 1871
Munro, Murdoch, Williamstown, L'Orignal..... 1872
*Murray, Charles H., († N)..... 1873
Naylor, W. H., († P), Clarendon, Q.... 1872
Newnham, Jarvois A., Lewis, Q..... 1878
Ogilvie, Archibald, N. Georgetown, Q. 1880
Oliver, Theophilus H., (Morrin) (P 2).. 1866
Parsons, Simeon H., B.A., New Brunswick (ad eun), Montreal, Q..... 1881
Pease, George H., († C), 120 Broadway, New York..... 1864
Pedley, Hugh, Cobourg, O..... 1876
Pedley, Charles S., (P), Port Perry, O. 1878
Perrigo, James, (N) Montreal..... 1866
* Perkins, John A..... 1858
Petit, Rev. Charles B..... 1850
Phillips, Charles W..... 1852
Pillsbury, Carrol E., Augusta, Me., U.S..... 1880
* Plimsoll, Reginald J..... 1858
Pritchard John C., (Morrin) Quebec.... 1881
Ramsay, R. Anstruther, B.C.L. († N), Montreal..... 1862
Raynes, Charles, Montreal..... 1880
* Redpath, George D..... 1857
Redpath, William W., Montreal..... 1879
Reddy, Herbert L., (E), Montreal..... 1873
Reid, James (P 2), North Mountain, O. 1881
Rexford, Elson J., (P), Montreal..... 1876
Ritchie, Arthur F., (C) 6 West 3rd St. St. Paul, Minn..... 1873
Ritchie, Wm. F., († C), 660 Sherbrooke St. Montreal..... 1875
* Roberts, George F., (P 2) Montreal.. 1880
Robertson, Alex., († N), 1100 Dorchester St. Montreal 1870
Robertson, Geo., Garafraxa, O..... 1881
Robertson, Robert, (P), Yarmouth, N.S..... 1877
Robins, Sampson Paul, († M), Montreal..... 1863
Ross, George, († C), Montreal..... 1862
Ross, James, († P), Huntingdon, Q.... 1878
Russell, Henry, (Morrin)..... 1869
Rutherford, Alex., B.C.L., Ormond, O.. 1881
Scott, Henry C., (Morrin) (P), Montreal 1866
Scott, Matthew H., († N), Bristol, Que. 1877
Scriver, Charles W., Hemmingford, Q... 1880
Sherrill, Alvan F., († N), Omaha, Nebraska, U.S..... 1864
Slack, George, Montreal..... 1868
Stethem, George T..... 1852
Stevens, William H., St. Johns, Q..... 1879
Stevenson, Samuel C., Montreal..... 1874
Stevenson, Rev. J. F., B.A., London Univ., (ad eun), Montreal..... 1876
* Stewart, Colin Campbell († N)..... 1867
Stewart, William S., († C), Charlottetown, P.E.I..... 1878
Stuart, Gustavus G., († P), Quebec 1875
Sweeney, James F., Franklin, Q..... 1878
Tabb, Silas Everett, (N), Sherbrooke, Q 1866
Taylor, Archibald D., (C), Montreal... 1874
Taylor, Edward T., Kingston, O 1878
Taylor, Ernest M., Stanstead, Q 1875
Thomas, Henry W., († E), Montreal... 1874
Thornton, Rev. R. McA., (Toronto) (ad eun), Glasgow, Scotland..... 1871
Thornton, Hastwell W., (N), Montreal. 1878
Torrance, Edward F., (P 2), Peterboro, O..... 1871
Torrance, Frederick W., Montreal..... 1878
Torrance, John Fraser, Montreal..... 1872
Trenholme, Norman Wm., († P), Montreal 1868

Tucker, Jno. W., (†C), Sorel, Q..... 1881
Tunstall, Simon J., (E), Montreal..... 1873
Tupper, James S., (N), Toronto..... 1871
Walker, John, (Morrin), Quebec..... 1880
Walker, Thomas..... 1860
Wallace, Robt. W., (P), London, O.... 1872
Ward, George B., (†C), Orillia, O..... 1874
Warriner, Rev. William H., (†E), Yorkville, O..... 1877
Watson, Alindus J., London, O..... 1876
Watts, Wm. John, (C), Drummondville, Que..... 1866
Weeks, Wm. A., Charlottetown, P.E.I. 1881
Wellwood, James, Côte des Neiges, Q. 1878
Whillans, Robert, Ottawa..... 1872
White, Wm., Montreal 1881
Wicksteed, Richard M., (C), Ottawa... 1863
Wilson, John, (E) 1866
Wood, Franc O., Montreal..... 1869
Wood, Thomas F., Montreal..... 1869
Wood, Holton H., 764 Sherbrooke St., Montreal..... 1879
Wotherspoon, Ivan T., (Morrin) (P), Montreal..... 1866
Wright, Wm. McKay, Ottawa 1861

BACHELORS OF APPLIED SCIENCE.

In Civil and Mechanical Engineering.

Archbald, Hy. A., Montreal..... 1881
Boswell, St. George J., Assistant Engineer Harbour Improvements, Que. 1874
Boulden, Charles M., Millersburg, Ky., U.S..... 1878
Brodie, Robert J., Montreal..... 1873
Batcheller, Alvan A., Bedford, Q..... 1875
Chipman, Willis (N), Brockville, O 1876
Dawson, William B., B.A., Montreal.. 1875
Dudderidge, James, Lachute, Q..... 1880
* Frothingham, John J..... 1875
Harvey, Charles J., B.A., St. John's, Newfoundland..... 1874
Hawley, David F., Aird, Q..... 1876
Hethrington, Frederick, Quebec..... 1876
Hall, Richard, Chelsea Road, near Ottawa..... 1878
Hill, Arthur E., Sydney, C.B 1875
Jones, Thomas H., Bradford, O 1877
Kennedy, George T., M.A., Acadia College, Wolfville, N.S..... 1873
McLeod, Clement H., Montreal..... 1873
McLean, Alexander J., Canada Pacific Railway..... 1874
O'Dwyer, John S., Montreal (L)..... 1880
Page, John, Lachine Canal Works, Office of Engineer, Montreal..... 1875
Richard, Louis Napoleon, Montreal.... 1881
Robertson George S., do do do. 1874
Rogers, Richard B., Auburn, O 1877
Ross, George, Toronto, O..... 1875
Ross, Philip D., Montreal..... 1878
Skaife, Wilfred T., Montreal..... 1880
Sproule, William J., Montreal Harbour Works..... 1877
Stewart, Donald A., Fort William, L.S. 1873
Swan, John, Windsor St. Montreal.... 1878
Thompson, William T., (N), Cannington, O..... 1877
Waddell, Robt. Wm., Coburg, O..... 1881
Walbank, William McL., Union Av. Montreal..... 1877
Wardrop, Norval, Brockville, O 1877
Wicksteed, Henry K., Ottawa..... 1873
Wilson, Robert A., Winnipeg, Man.... 1875

In Mining and Assaying.

Robertson, William F., (N 2), Montreal. 1880
Rogers, Richard B..... 1878
Spencer, Joseph Wm., (N), Windsor, N.S..... 1874
Torrance, John Fraser, B.A., (N), Tangier, N.S..... 1873
Wicksteed, Henry K..... 1874
Wilkins, Dan. F. H., B.A., (Tor) (N), Chatham, O..... 1875

In Practical Chemistry.

Adams, Frank, (N), Geological Survey, Montreal..... 1878

GRADUATES IN CIVIL ENGINEERING.

Barnston, Alexander, B.A., M.D..... 1859
Bell, Robert, (N), Geological Survey.. 1861
Crawford, Robert..... 1859
Doupe, Joseph, Winnipeg, Man..... 1861
Edwards, George..... 1863
Frost, Geo. H., Tribune Building, N.Y. 1860
Gaviller, Maurice..... 1863
* Gooding, Oliver 1858
Gould, James H 1862
Kirby, Charles H., 58 Crescent St. Montreal..... 1860
McLennan, Christopher..... 1859
Reid, John Lestock, Prince Albert, Man..... 1863
Rixford, Gulian Pickering..... 1864
Ross, Arthur..... 1860
* Savage, Joseph..... 1860
Walker, Thomas, B.A 1860

[C]	First Rank Honours in Classics:				[C2]	Second Rank do.		
[E]	do	do	do	in English Literature, &c.	[E2]	do	do	
[M]	do	do	do	in Mathematics and Physics.	[M]	do	do	
[N]	do	do	do	in Natural Science.	[N2]	do	do	
[P]	do	do	do	in Mental and Moral Philosophy.	[P2]	do	do	
[ML]	do	do	do	in Modern Languages.	[ML2]	do	do	

[L] Lorne Medal for highest Standing in Examinations for Bachelor of Applied Science.

* Deceased.

† indicates the Gold Medallist for the subject denoted by the letter to which it is prefixed: or, if standing alone, for best general standing. For the titles of the Gold Medals assigned to the several subjects since 1864, see § VI. of Faculty of Arts.

In 1857, 1858, 1859, the Chapman Medal was awarded for the best general standing; 1860, 1861, 1862, for Classics; 1863 for Mental and Moral Philosophy; 1864 for Natural Science.

In 1862 the Prince of Wales Medal was awarded for Natural Science; 1863 for Mathematics and Physics; 1864 for Classics.

NOTE.—The Registrar of the University will be grateful for any corrections or additions to the addresses given in the above lists; and also for communication of titles which graduates may have acquired since their graduation.

Students of the University.

SESSION 1880–81.

McGILL COLLEGE.

FACULTY OF LAW.

First Year.

Bain, Hugh A., Montreal, Q.
Burroughs, William A., Montreal, Q.
Campbell, Robert M., Montreal, Q.
Chambers, Arthur A., Montreal, Q.
Demers, Jean B., Montreal, Q.
Dickson, William E., Trenholmville, Q.
Fair, John, jun., Montreal, Q.
Hague, Frederick, Montreal, Q.
Hutchins, Horace A., Farnham, Q.
Hunter, Walter, Hamilton, O.
Leet, Lynn F., Shipton, Q.
Martin, John E., Shefford, Q.
McConnell, Arthur, Montreal, Q.
McKenzie, Peter S. G., Melbourne, Q.
Phillips, Edward W. H., Montreal, Q.
Roy, Charles S., Montreal, Q.
Tucker, Henry, Montreal, Q.

Second Year.

Barnard, Archibald E., Montreal, Q.
Brooke, George A., Richmond, Q.
Crankshaw, James, Montreal, Q.
Cross, William H., Montreal, Q.
Dagenais, Joseph A., Ste. Rose, Q.
Duhig, John T., Quebec, Q.
Girard, Alfred C., Marieville, Q.
Guertin, Alfred L., Montreal, Q.
Goldstein, Maxwell, Montreal, Q.
Hipple, Ezra F., Campden, O.
Joliffe, William J., Montreal, Q.
Klock, Robert A., Montreal, Q.
Lefebvre, Toussaint Z., Montreal, Q.
Lighthall, George R., Montreal, Q.
McDonald, Hector C., Belfast, P.E.I.
Morgan, Edward A. D., Montreal, Q.
Pillsbury, Carrol E., Augusta, Me.
Renaud, Pierre U., Montreal, Q.
Scriver, Charles W., Montreal, Q.
Weeks, William A., Belfast, P.E.I.
Weir, Frank, Montreal, Q.
White, William J., Montreal, Q.
Wright, George C., Montreal, Q.

Third Year.

Aylmer, Hon. Henry, Melbourne, Q.
Chagnon, Joseph E., Montreal, Q.
Cross, Alexander, B.A., Ormstown, Q.
DeMartigny, A. L., Montreal, Q.
Downie, Donald, Hinchinbrooke, Q.
Forster, Rev. Joseph L., Newcastle-on-Tyne, E.
Foster, George G., Knowlton, Q.
Gauthier, Antoine A., Sault-au-Recollet, Q.
Guerin, Edmund W. P., B.A., Montreal, Q.
Ingalls, Allen G., Granby, Q.
Jackson, S. M., Montreal, Q.
Klock, Robt. Alex., Aylmer, Q.
Lane, Campbell, B.A., Montreal, Q.
Lighthall, William D., B.A., Montreal, Q.
Lyman, Albert C., Montreal, Q.
McMahon, Edmond M., Montreal, Q.
Muir, William S., Montreal, Q.
Oughtred, Allen R., Sheridan, O.
Polette, Wm. A., Montreal, Q.
Raynes, Charles, Montreal, Q.
Redpath, William W., B.A., Montreal, Q.
Rutherford, Alexander C., Woodstock, O.
Shortis, James, Three Rivers Q.
Sjostrom, Paul R. G., Sherbrooke, Q.
Smith, Robert C., Montreal, Q.
Trudel, Louis P., Montreal, Q.
Weir, William A. Montreal, Q.

FACULTY OF MEDICINE.

Addison, James L., West Flamboro, O.
Allan, James H. B., Montreal, Q.
Allen, Herbert W., Henvelton, N.Y.
Allen, Clarence E., East Farnham, Q.
Aylen, Peter, Aylmer, Q.
Bangs, Edson Clark, Faribault, Minn.
Barrett, Joseph, Prescott, O.
Bennett, James, B.A., Montreal, Q.
† Bonesteel, S. A., Columbus, Neb.
Bowser, James C., Kingston, N.B.
Brown, S. E., Henvelton, N.Y.
Brown, Charles O., Lawrenceville, Q.
Brown, J. G. W., Charlottetown, P.E.I.
† Brown, Thomas L., Ottawa, O.
Bunnell, Wilber P., Hartford, Conn.
Burland, Benjamin W., Ft. Kent, N.Y.
Cameron, Duncan A., Strathroy, O.
Cameron, Charles E., Montreal, Q.
Cameron, Paul, Williamstown, O.
Cameron, John W., Montreal, Q.
Campbell, Lorne, Montreal, Q.
† Carson, John H., Port Hope, O.
Cattenach, Angus M., Dalhousie Mills, O.
Case, Thos. E., Exeter, O.
Christie, Edmund, Lachute, Q.
Clarke, H. J., Pembina, Dak.
Cook, E. C., Norwich, O.
† Cormack, Wm., Guelph, O.
Cousins, William C., Ottawa, O.
Cuthbert, Albert R., Berthier, Q.
Davies, Thomas B., Ottawa, O.
Dawson, Rankine, B.A., Montreal, Q.
Dearden, George A., Richmond, Q.
Derby, William J., North Plantagenet, O.
Devlin, Francis E., Montreal, Q.
Doherty, W. W., Kingston, N.B.
Drummond, William A., Montreal, Q.
Dulmage, W. R., North Plantagenet, O.
Duncan, W. T., Granby, Q.
Duncan, John A., Duncanville, O.
Duncan, George H., Duncanville, O.
Dunlop, Alex. H., Pembroke, O.
Elder, John, Huntingdon, Q.
Elderkin, Edwin J., Apple River, N.S.
Elliott, Andrew, Almonte, O.
Fairbanks, Chas. S., Oshawa, O.
† Feader, Henry C., Iroquois, O.
† Fielde, Edmund C., Prescott, O.
Forde, S. M., Pembroke, O.
Fraser, M Stewart, Hamilton, O.
† Fraser, Henry D., Pembroke, O.
Gale, Hugh, Elora, O.
Gardner, John J., Beauharnois, Q.
Gooding, Charles E., Barbadoes, W. I.
† Gordon, Chas. M., Ottawa, O.
Graham, George A., Hamilton, O.
Graham, John, Carp, O.
Grant, James A., B.A., Ottawa, O.
Gray, James, Brucefield, O.
† Gray, William L., Pembroke, O.
Haldimand, A. W., Montreal, Q.
Hanvey, Chas. B. H., Cleveland, O.
Harris, A. D., Ingersoll, O.
Harrison, H. J., Moulinette, O.
† Harvie, John B., Ottawa, O.
Henry, W. G., Chatham, O.
† Higginson, Henry A., L'Orignal, O.
† Houston, D. W., Belleville, O.
Hurdman, B. F. W., Aylmer, Q.
† Heyd, Herman E., Brantford, O.
Hopkins, Joseph A., Cookshire, Q.
Houlahan, Thomas J., Morrisburg, O.
Howard, Robt. J. B., B.A., Montreal, Q.
† Hunt, John J., Lambeth, O.
Hutchinson, James A., Goderich, O.
Ievers, Henry, Montreal, Q.
Jack, W. D. B., B.A., Fredericton, N.B.
Johnson, J. R., Farmersville, O.
Johnson, C. H., Almonte, O.
Johnston, Wyatt G., Sherbrooke, Q.
Jolliffe, James H., B.A., Cincinnati, O.
† Josephs, George E., Pembroke, O.
Kelly, Patrick N., Rochester, Minn.
Klock, William H., Aylmer, Q.
Klock, Robert H., Aylmer, Q.
Landor, Thomas H., London, O.
Lang, William A., St. Mary's, O.
Lathern, John S., Yarmouth, N. S.
† Laurin, E. Joseph, Montreal, Q.
Loring, J. B., Sherbrooke, Q.
† Lunam, Henry, B.A., Litchfield, Q.
Martel, Ovide, Montreal, Q.
Maher, James J. E., Albany, N.Y.
Meahan, John C., Bathurst, N.B.
† Macdonald, Robt. T. E., Montreal, Q.
McCorkill, Robert K. C. G., Montreal, Q.
McDonald, Norman J., Mount Stewart, P.E.I.
† McGannon, Edward A., Prescott, O.
McInerney, James P., Kingston, N.B.
McKay, James, Ottawa, O.
McKenzie, James T., Plainfield, O.
† McKenzie, Kenneth A. J., Melbourne, Q.
McLean, Thomas N., Perth, O.
McLean, John W., Strathlorne, N.S.
McLean, I. M., B.A., Pictou, N.S.
McLeod, Archibald, Orwell, P.E.I.
McNeill, Alex., Charlottetown, P.E.I.
McRae, John C., Port Colborne, O.
Menzies, John, Pembroke, O.
† Mewburn, Frank H., Drummondville, O.
Morris, William, Brockville, O.
† Moore, William, Owen Sound, O.
Muckey, Floyd S., Medford, Minn.
Musgrove, Wm. J., West Winchester, O.

Nelson, W. M., Montreal, Q.
Nutter, Asa S., Montreal, Q.
O'Brien, Timothy, Brudenell, O.
O'Brien, T. J. Pierce, Worcester, Mass.
O'Keefe, Henry, Lindsay, O.
Ogden, Henry V., B.A., St. Catharines, O.
Page, Thomas A., Brockville, O.
Park, James, Newcastle, N.B.
† Perks, Wm. C., Port Hope, O.
Phippen, S. S. C., Parkhill, O.
Poaps, Allen P., Osnabruck Centre, O.
Porteous, William, Pembroke, O.
Prendergast, Walter J., B.A., Côte des Neiges, Q.
Reid, J. T., Sherbrooke, Q.
Renner, William S., Jordan Station, O.
† Reynolds, Thomas W., Brockville, O.
† Rogers, Ed., J. A., Peterboro, O.
Ross, Lewis D., Montreal, Q.
Ross, William K., Goderich, O.
† Ross, John W., Winthrop, O.
† Ross, James, B.A., Dewittville, Q.
Rutherford, Clarendon, M.A., Waddington, N.Y.
Rutledge, And. J., Bayfield, O.
Rowell, George B., Abbotsford, Q.
Scott, John M., Carleton Place, O.
Scott, Walter McE., Winnipeg, Man.
† Serviss, Thos. W., Iroquois, O.
† Shanks, James C., Huntingdon, Q.
Shaw, Alex., Seaforth, O.
Sharp, J. C., Sussex, N.B.
Shirriff, George R., Huntingdon, Q.
Sihler, George A., Simcoe, O.
† Shufelt, William A., Brome, Q.
Smith, Edwin H., Prescott, O.
Smith, Edward W., B.A., West Meriden, Conn.
Smith, W. A., Brockville, O.
† Smith, Edward H., Montreal, Q.
Smyth, Herbert E., Worcester, Mass.
St. Germain, Joseph P., Concord, N.H.
Sparling, W. H., B.A., St. Marys, O.
† Stephen, William, Montreal, Q.
Stewart, Andrew, Howick, Q.
Struthers, Alex. D., Phillipsburg, Q.
Taplin, Albert E., Farmersville, O.
Taylor, Arthur J., Montreal, Q.
Thornton, H. W., B.A., Montreal, Q.
Thompson, William E, Harbor Grace, Nfld.
† Trueman, James E., Sackville, N.B.
Tupper, Freeman, Milton, N.S.
† Wagner, George C., Dickinson's Landing, O.
Walker, Felix D., Launching, P.E.I.
† Williams, Joseph, London, O.
Wilson, S. F., M.A., Springfield, N.B.
Wood, Ed. S., Faribault, Minn.

† M.D., C.M., 1881.

FACULTY OF ARTS.

Undergraduates in Arts.

First Year.

Blackader, Edward H.,	Montreal, Q	Laws, Elgin,	Effingham, Monck Co., O
Boyd, John A.,	Montreal, Q	Larivière, Dolard,	Roxton Falls, Q
Cameron, Kenneth,	Montreal, Q	Mabon, James,	St. Louis de Gonzague, Q
Carmichael, James,	Hamilton, O	Mackay, Adams A.,	River John, Pictou Co., N.S
Christie, William,	Lachute, Q	Massé, Godefroi,	Grande Ligne, Q
Colquhoun, Arthur H. A.,	Montreal, Q	Pedley, James W.,	Cobourg, O
Currie, Walter T.,	Toronto, O	Rogers, George,	Lakefield, Q
Duclos, John E.,	Hull, Q	Rondeau, Samuel,	St. Elizabeth, Q
Gerrie, Andrew W.,	Fergus, O	Turner, Walter H.,	Montreal, Q
Joseph, Stuart Scott,	Quebec, Q	Unsworth, Joseph K.,	Georgetown, O
Kennedy, Robert Alex.,	Ottawa, O	Wright, George C.,	Hull, Q
Kinghorn, Richard S.,	Montreal, Q		
Kirkpatrick, Robert C.,	Montreal, Q		

Second Year.

Barlow, Alfred E., Montreal, Q
Blanchard, H. Percy, Windsor, N S
Bland, Charles E., Montreal, Q
Bowers, Alfred A., Kincardine, O
Brown, J., Williston, Charlottetown, P E I
Cameron, John D., Dewittville, Q
Dixon, Wellington, Charlottetown, Royalty, P E I
England, Luther M., Knowlton, Q
Ferguson, Charles F., Richibucto, N B
Fraser, William, Dundee, Q
Gairdner, Thomas, Bayfield, O
Gardner, Alexander, St. Louis de Gonzague, Q
Greenshields, Robert A., Danville, Q
Griffith, Thos. H., Montreal, Q
Hunter, Walter, Hamilton, O
Kinloch, John Alex., Montreal, Q
Lee, Archibald, Pendleton, O
Marceau, James H., Napierville, Q
Morris, Charles B., Montreal, Q
Murray, J. Ralph, Montreal, Q
O'Halloran, George F., Cowansville, Q
Porter, James A., Kemptville, O
Richardson, Alex. W., Montreal, Q
Ross, Lewis F., Montreal, Q
Ross, Peter R., West Torre, O
Shearer, Wm. K., Athelstan, Q

Third Year.

Barron, Thomas J., Lachute, Q
Cockfield, Henry, Montreal, Q
Duffett, Henry J., Kinnear's Mills, Q
Gregor, Leigh R., Charlottetown, P E I
Hague, Henry J., Montreal, Q
Jones, John E., Digby, N S
Lafleur, Henri A., Montreal, Q
Lawford, Charles A., Montreal, Q
Mackay, Daniel, Pictou, N S
McKillop, Peter C., Inverness, Q
Martin, Alfred W., Montreal, Q
Morin, Jos. L., Three Rivers, Mass, U S
Parent, Manasseh B., St. Pie, Q
Rielle, Norman T., Montreal, Q
Rogers, John H., Huntingdon, Q
Smith, Arthur W., Lachine, Q
Stewart, Robert, Lachute, Q
Stirling, Robert, Montreal, Q
Thomas, Francis W. G., Montreal, Q
Trenholme, Chas. W., Montreal, Q
Walker, George F., Waddington, N Y, U S
Whillans, George, Ottawa, O

Fourth Year.

Ami, Henry Mark, Ottawa, O
Black, Charles, Granby, Q
Bracq, John C., Grand Ligne, Q
Elder, John, Huntingdon, Q
Falconer, Alexander, Montreal, Q
Ferguson, William A., Richibucto, N B
Gamble, Robert, Billings' Bridge, O
Lyman, Walter E., Montreal, Q
McDonald, Hector C., Flat River, P E I
McKenzie, Wm. Alex., Lanark, O
MacLeod, Archibald, Orwell, P E I
McNabb, Robert, Woodville, O
Macpherson, Kenneth R., Montreal, Q
Reid, James, North Mountain, O
Robertson, George, Garafraxa, O
Rutherford, Alexander C., Ormond, O
Tucker, John W., Sorel, Q
Weeks, Wm. A., Charlottetown, P E I
Weir, Frank, Montreal, Q
White, William John, Montreal, Q

Partial and Occasional.

Bolton, Charles E., Bolton, O
Campbell, John, Dunvegan, Glengarry Co, O
Clerk, Alton F., Montreal, Q
Dewar, Donald Lauchlin, Glensandfield
Dow, James, Montreal, Q
Edge, Joseph, Traverston, O
Fear, Ezra A., Brussels, O
Francis, George H., Burlington, Vt, U S
Gibson, James A., Dunham, Q
Grant, John Peter, Metcalfe, O
Lawrence, Charles H.,
McKinnon, John, Manilla, O
McLean, Donald, Prince Edward Island
Mercer, W. D. (B.A.) Montreal, Q
Moore, Samuel, Mille Isles, Q
Moir, David, London, O
Murchison, Roderick L., Dundee Centre
Rogers, Isaac, Lakefield, Q
Scott, Edwin E., Toronto, O
Shipperley, James, Yarmouth, N S
Skaife, Francis W., Montreal, Q

Hazlewood, J. H.,	Lakelet, O	Skinner, George,	Melbourne, Q
Henderson, Johnson,	Toney River, Pictou, N S	Smith, Alfred E.,	Carlingford, O
		Smith, William,	Montreal, Q
Herridge, Wm. T.,	Montreal, Q	Sorley, James S.,	Montreal, Q
Hipple, Ezra F.,		Tait, T. J.,	
Hitchcock, Gilbert P.,	Massawippi, Q	Thompson, J. B.,	St. John's, Nfl'd
Houlahan, Alex.,	Brinston's Corners, Dundas Co, O	Treleavan, Richard J.,	Dungannon, O
		Turk, George Richard,	Tilsonburg, O
Internoscia, Antonio,	Montreal, Q	Walker, Andrew C.,	Montreal, Q
Laendall, Sidney C.,	Montreal, Q	Way, William H.,	Montreal, Q
Knceley, Ebenezer,	Hamilton, O	Young, William R.,	Kingston, O

FACULTY OF APPLIED SCIENCE.

First Year.

Forlong, Gordon, Lachute, Q.	Murray, William L. T., Montreal, Q.
Graham, William, Montreal, Q.	Ogilvy, David, Montreal, Q.
Hamilton, Edward H. Montreal, Q.	Robert, Joseph A., Beauharnois, Q.
Klock, William H., Aylmer, Q.	Walters, Henry McD., Montreal, Q.

Second Year.

Davis, Allan R., Adolphustown, O.	Skaife, Lewis J., Montreal, Q.
Dowling, Donaldson B., Napanee, O.	Smith, Richard F., Montreal, Q.
McMillan, David E., Montreal, Q.	Street, Henry, Ottawa, O.
McTaggart, Duncan D., Montreal, Q.	

Third Year.

Burland, Jeffrey H., Montreal, Q.	Green, Thomas D., Brantford, O.
Collins, John J., Manotick, O.	Low, Albert P., Montreal, Q.
Foster, Phillip L., Longueuil, Q.	Miller, Fred., Napanee, O.

Fourth Year.

Archibald, Henry A., Montreal, Q.	Waddell, Robert W., Cobourg, O.
Richard, Louis, Montreal, Q.	

Occasional Students.

Drummond, J., Manitoba.	Lesage, Thomas W., Montreal, Q.
Houlahan, Alexander, Morrisburgh, O.	Routhier, Jude R., Vankleek Hill, Q.
Hubbard, —, Glasgow, Eng.	Stephen, George C., Montreal, Q.

MORRIN COLLEGE.

FACULTY OF ARTS.

Undergraduates.

Chambers, Edward D. T., Quebec, Q.
Duclos, Charles A., Quebec, Q.
Ferguson, John A., Quebec, Q.
Forrest, William H., Quebec, Q.
Kerr, Robert, Quebec, Q.
Meredith, Frederick E., Quebec, Q.
Maxwell, Andrew B., New Carlisle, Q.
Pritchard, John G., Valcartier, Q.
Ross, John Theodore, Quebec, Q.
Ralph, Nathaniel, Quebec, Q.

Besides 32 Occasional Students.

ST. FRANCIS COLLEGE, RICHMOND, P. Q.

FACULTY OF ARTS.

Undergraduates.

FIRST YEAR.

Cassidy, H. J., Kingsey Falls, Q.

SECOND YEAR.

Dickson, J. A., Trenholmeville, Q.
Mackie, John, Danville, Q.
McLeod, Norman, Brompton Gore, Q.
McKenzie, Peter S. G., Melbourne, Q.

OCCASIONAL.

Barvis, William, Arthabaskaville, Q.
Graham, George, Richmond, Q.
Leonard, John, Winslow.
Leonard, William, Kingsbury, Q.

SUMMARY.

Students in Law, McGill College,			67
" in Medicine "			168
" in Arts "	Undergraduates,		93
	Partial and Occasional,		41
" in Applied Science	Undergraduates,		24
	Occasional,		6
" " Morrin College,	Undergraduates,		10
	Occasional,		32
" " St. Francis College,	Undergraduates,		5
	Partial and Occasional...		4
Total number of Students,			450
Deduct entered in two Faculties,			8
			442
Teachers in training in Normal School,			125
Pupils in Model Schools,			340
Total Students and Pupils,			907

Higher Examination of Women.

SENIOR ASSOCIATES IN ARTS.

1880.

GEORGINA HUNTER, Montreal.

1881.

MARGUERETA FRANCIS, Montreal.

School Certificates of the University.

ASSOCIATES IN ARTS.

1865.

Montgomery Jones.
John Ferguson.
Charles Cushing.
Robert H. Conroy.
Samuel Stevenson.
Wallace Clarke.
Frederick W. Evans.
Robert W. Forester.
Edward B. Greenshields.
Montgomerie Lewis.
George Joseph Bull.
Albert Murray.
Daniel McLachlin.

1866.

Sidney Arthur Fisher.
Charles E. Porteous.
Will. W. Walkem.
Chas. G. Stewart.
Geoffrey W. Porteous.
Florence David.
Hew. D. Whitney.
George W. Torrance.
Robt. M. Esdaile.

1867.

Charles H. Ferry.
James Rodger.

1862.—*Continued.*

Geoffrey W. Porteous.
Thomas C. Thomson.
Francis J. Shepherd.
Gerald Lloyd.

1868.

John Fraser Torrance.
Will. Osborne M. Cross.
Henry G. W. Badgley.
John B. Abbott.
John Gray Grant.
Thomas C. Hempsted.

1869.

Arthur F. Ritchie.
Simon J. Tunstall.
Charles R. Jones.
O'Hara Baynes.
Aaron D. M. DeSola.
Charles Jas. Fleet.
John Thos. Caldwell.
James M. Mitchell.
John Kay.
James Green.

1870.

William Bell Dawson.

1870—*Continued.*

Archibald D. Taylor.
Hiram B. Stephens.
Henry W. Thomas.
Samuel Greenshields.
Sheringham A. Shepherd.
William McEachran.
David S. Robertson.

1875.

William D. Lighthall.
W. A. Farwell.
Robert T. B. Howard.
Charles A. Molson.

1876.

J. Herbert Darey.
Paul Theodore Lafleur.
Edwin Hudson Bisset.
Andrew G. Ross.
James R. Foster.
Frederick Mindon Cole.
William Dawson McGregor.
John Ewart.
J. Gordon Gibson.
Wilfred T. Skaife.
Charles J. Walker.

1877.

Alexander Falconer.
Thomas B. Macaulay.
Armand F. Teefy.
Mina Douglas.
M. Stuart Fraser.
William Martin.
Walter H. Snow.
Louisa McFee.
Margaret A. Mills.
Ida Papineau.
Walter E. Lyman.
Helen Macklen.
Jane Darling.
George Graham.
Murray A. Biggar.
Jessie Ross.
Eva Dawson.
Alice Cumming.
Kenneth R. Macpherson.
Walter H. Lancey.
Robert A. Wallace.
Alexander McGibbon.
Marietta Jones.
Frank Weir.
Nathaniel D. Drew.

1878.

Henri A. Lafleur.
Grace Darling.
Henry R. Fairclough.
Andrew Lawson.
William H. Boyle.
N. J. Rielle.
George Kapelle.
John B. Rose.
Lillian Martin.
Henry Cockfield.
Louisa Harrison.
David Young.
Lawrence C. Rose.
Bessie Radford.
Kate McKeand.
Maggie Stewart.
Maggie Campbell.
A. W. Martin.
Florence W Bissett.
C. W. Trenholme.
Robert Sterling.
Maggie White.
Frederick E. Belcher.
Anna Baxter.
Minnie Greenshields.
Emma D. Meikle.
C. D. Godfrey.
Lawrence MacRae.
Neil McLennan.

1879.

James Charles Allan.
Charles Edward Bland.
George W. Hambley.
John C. Fields.
R. Norman Hudspeth.
Louisa McDonald.
Wyatt G. Johnston.
Robert Little.
Henry J. H. Petry.
Edward J. K. Noyes.
Edith Durdan.
Adolph Craft.
Richard F. Morris.
William Morris.
Duncan D. McTaggart.
Archibald McK. McMechan.
Donald John Fraser.
John Coutts.
Thomas Crawford.
Jessie McConnell.
Devereux Emmet.
Alfred E. A. Barlow.
Elizabeth Smith.
Claude L. Wheeler.
Charles McP. Holt.

1879.—*Continued.*

Maggie Osgood.
George S. Baker.
Arthur G. Weld.
William L. Murray.
Christina J. Galt.
George R. Mills.
Alexander Malcomson.
Thomas J. Tait.
Kenneth D. Young.
Albert W. Haldimand.

1880.

Edward H. P. Blackader.
William Logan.
Mary J. MacCallum.
Walter H. Turner.
Minnie H. McKean.
Mary B. Badenach.
Wm. C. Morrison.
Robert C. Kirkpatrick.
Julius T. Gnaedinger.
Richard S. Kinghorn.
Jean W. Johnston.
Norman R. Macaulay.
Hugh McLennan.
William Cherrie.
Eugene McMullan.
Elena C. Livingston.
William Christie.
James B. McNaughton.
Lyman Duff.
John D. Courtney.
Maud M. Lamb.
William Gibson.
James B. Gibson.
Frank Baker.

1881.

Frank P. Bernard.
Charles R. Daoust.
Frederick L. Barlow.
Percy E. Judge.
Peter C. Mitchell.
Alexander J. Tolmie.
William Mitchell.
Edward P. Mathewson.
Henry Munderloh.
Ellen E. Coo.
Wilfred R. Morris.
John J. Arnton.
Hanbury A. Budden.
Manson D. Teetzel.
William T. Gunn.
George H. Guy.
Charles Burkholder.
William M. Reid.
Philip M. Robertson.
Percival Tibbs.
William Reid.
Ellen F. Kemp.
Grace Foster.
Alice M. Cook.
James W. Morrice.
Ridley L. Charlton.
James H. Bissett.
Andrew Stuart.
Mary E. Clunie.
Archibald Robertson.
Arthur H. Irwin.

JUNIOR CERTIFICATES.

1875.

Charles F. Dawson.
William C. Norris.
William S. Kerry.
Frank D. Adams.

1876.

William R. Robertson.

1877.

Annie Cusack.
Lizzie Cox.
Ella Gardiner.
Elizabeth Monk.
Jessie Logan.
Alexander W. Richardson.

1878.

George Ross.
David McKinnon.
Jane Wood.
Annie Troup.
Jennie Edgar.
Edwin W. Griffin.
Mary Troup.
Herbert R. Macaulay.
Jessie Stewart.
Alexander Ambrose.
Milton Vandewater.
Julie Somerville.
Maggie Osgood.
Fritz G. Gnaedinger.
Robert A. Elliott.
Dora Scott.
Frederick F. Kingston.
William H. Adams.

1879.

Margaret McCoy.
Ina Sutherland.
Hattie Dalley.
Grace Darling.
Margaret Wilson.
Augusta Pedersen.
George Corey Thomson.
Georgina Iles.
Mary Mitchell.
Arthur Mercer.

1880.

Jessie S. Greenshields.
William Graham.
Bertha Savage.

1880.—*Continued.*

Ellie M. Cole.
David Ogilvie.
Jeannie Ross.
Lorrie Dickson.

1881.

Annie B. Barr.
Agnes H. Fairbairn.
John S. Cassils.
Martha Martin.
Mary C. Greer.
Jeanie Dickson.
Ernest Allard.
Nellie Hall.
Henry Allen.
J. W. H. Milne.

STANDING IN THE EXAMINATIONS, 1881.

SENIOR ASSOCIATE IN ARTS.

Marguerita Francis (McGill Normal School and Private Tuition), creditable answering in all the Imperative subjects and in Mathematical Physics.

ASSOCIATES IN ARTS.

No.			
14.	Frank P. Bernard (High School, Montreal),	1107	Marks.
4.	Charles R. Daoust (High School, Montreal),	1050	"
13.	Frederick L. Barlow (High School, Montreal),	1023	"
7.	Percy E. Judge (High School, Montreal),	962	"
18.	Peter C. Mitchell (High School, Montreal),	961	"
22.	Alexander J. Tolmie (High School, Montreal),	927	"
19.	William Mitchell (High School, Montreal),	919	"
17.	Edward P. Mathewson (High School, Montreal),	818	"
20.	Henry Munderloh (High School, Montreal),	895	"
27.	Ellen E. Coo (Girls' High School, Montreal),	876	"
30.	Wilfred R. Morris (McTavish School, Montreal),	850	"
1.	John J. Arnton (High School, Montreal),	840	"
3.	Hanbury A. Budden (High School, Montreal),	835	"
46.	Manson D. Teetzel (Collegiate Institute, Hamilton),	822	"
5.	William T. Gunn (High School, Montreal),	813	"
6.	George H. Guy (High School, Montreal),	803	"
48.	Charles Burkholder (Collegiate Institute, Hamilton),	802	"
8.	William M. Reid (High School, Montreal),	781	"
10.	Philip M. Robertson (High School, Montreal),	716	"
12.	Percival Tibbs (High School, Montreal),	708	"
9.	William Reid (High School, Montreal),		
24.	Ellen F. Kemp, (Girls' High School, Montreal), } equal	687	"
25.	Grace Foster (Girls' High School, Montreal),		
40.	Alice M. Cook (Collegiate Institute, Hamilton), } equal	669	"
31.	James W. Morrice (McTavish School, Montreal),	660	"
34.	Ridley L. Charlton (St. Johns High School),	659	"
2.	James H. Bissett (High School, Montreal),	647	"
21.	Andrew Stuart (High School, Montreal),	624	"
36.	Mary E. Clunie (Lachute College),	622	"
50.	Archibald Robertson (Collegiate Institute, Hamilton),	620	"
35.	Arthur H. Irwin (St. Johns High School),	535	"

JUNIOR CERTIFICATES.

23. Annie B. Barr (Girls' High School, Montreal),	835	Marks.
26. Agnes H. Fairbairn (Girls' High School, Montreal),	828	"
16. John S. Cassils (High School, Montreal),	824	"
28. Martha Martin (Girls' High School, Montreal),	669	"
44. Mary C. Greer (Collegiate Institute, Hamilton),	564	"
42. Jeanie Dickson (Collegiate Institute, Hamilton),	531	"
63. Ernest Allard (Waterloo Academy),	506	"
60. Nellie Hall (Waterloo Academy),	442	"
61. Henry Allen (Waterloo Academy),	401	"
49. J. W. H. Milne (Collegiate Institute, Hamilton),	392	"

STANDING IN THE SEVERAL SUBJECTS.

[The numbers correspond with those in the preceding list. The numbers in parentheses are equal in standing.]

I. Preliminary.

Reading.—(61, 63), (24, 26), (27, 37, 44, 48, 60, 62), 33, (25, 28, 41, 42, 43, 46, 47, 49), (23, 35, 36, 45, 50), (32, 34, 40), (14, 21, 29), 12, (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 15, 16, 17, 18, 19, 20, 22, 30, 31).

Dictation.—25, 26, 27, 24, 22, (2, 9, 12, 29), (23, 63), 14, (5, 60), (17, 28, 31), (4, 6, 37), (1, 8, 13), (15, 30, 36, 42), 7, 46, (45, 61), (19, 3), (10, 16, 41), 18, (35, 44), 11, (20, 40, 62), 49, (21, 32, 33, 43, 48, 50), 47.

English Grammar.—(4, 7), (16, 25), (3, 16, 17, 22, 24, 46), (2, 5, 13, 36), (6, 23), (41, 45), (12, 26, 27), (1, 8, 20, 40, 44, 61), (19, 63), (9, 10, 47), (21, 30), (28, 31, 37, 48), (18, 29, 49, 50, 60), (42, 43), 35, (11, 32), 34, 62, 15, 33.

Arithmetic.—(14, 45), 30, 46, 47, (27, 44), 48, (24, 41), (13, 20, 34, 40, 49, 60), (7, 18, 41), (4, 17), 22, 36, 16, 23, (1, 3, 37), 42, 62, (8, 26, 63), 6, 50, (5, 9, 61), (19, 25), (28, 32), 12, 35, (15, 21), 10, (2, 43), 29, 31.

Geography.—(5, 14), 8, (3, 13, 17, 25, 46), (26, 41, 60, 63), (16, 20, 21, 23, 45, 50), (7, 12, 18, 19, 22, 37, 48), (4, 10, 24, 40, 61), (6, 15, 27, 34, 36, 44), (1, 29, 30, 42, 49), (11, 35, 62), (2, 28, 47), (43, 64), (9, 32), 31, 33.

British and Canadian History.—14, (13, 36, 46, 47, 61), (1, 17, 28), (5, 30, 34, 37, 45, 60), (3, 7, 20, 26), (4, 35, 63), (12, 18), 2, 10, (16, 40), (6, 8, 21, 25, 27, 43, 62), 31, (9, 19, 28), (11, 48), 49, 50, (34, 29, 42), 40, (15, 38), 44, 32.

Gospels.—(Creditable answering).—1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, 34, 35, 36, 37, 40, 42, 44, 45, 46, 47, 48, 50, 60, 61, 62, 63.

II. Optional.

Latin.—4, 30, 31, (7, 27), 24, 45, 48, 37, 6, (3, 50), 35, 34, (1, 36), 25, 8, 11, 10, 12, 47, 9, 2, 22, 5, 19, 13, 18, 21, 49.

Greek.—45, 30, 37, 31, 1, (4, 7), 6, 10, 11, 12, 8, 9, 5, 47, (3, 50), 49.

French.—4, 27, 23, 24, 14, 7, (22, 25), (2, 26, 40), (19, 28), (1, 29, 48), (13, 17, 37), 58, 18, 6, 9, 36, 20, 10, (3, 11, 44, 46), 12, 35, 30, 61, (5, 16, 34, 63), (21, 60), 42.

German.—26, 29, 28, 23, 14, 48, 40, (16, 17), 20.

Geometry.—14, 4, (7, 22), (18, 27), 11, 28, 13, 19, 45, 46, 3, 34, 48, 17, 16, 30, 37, 2, 1, (5, 20), 26, (44, 50), 23, 31, 6, (40, 47), (8, 10), (21, 24, 32), 9, 36, 12, 63, 42, (25, 43), 35, 62.

Algebra.—45, 40, 46, (14, 19), 4, 47, (7, 37), 1, 18, (13, 35), (6, 44), 41, (3, 42), (8, 11, 34), 21, (5, 10), (15, 30), 50, 20, 12, 27, 36, 49, 9, 22, 16, 25, (2, 31), 63, 17, 60, 23, (26, 61), 43.

Trigonometry.—45, 48, 18, 27, (13, 14, 20), (21, 26), 30, 19, 17, 23, 46, 16, 22, 15, 31, 28.

Natural Philosophy.—13, 22, 17, 20, 14, 19, 16, 18, 15.

English Language.—4, 3, 5, 37, 20, 13, 16, 22, (17, 19), 18, 45, 10, 14, 40, (1, 44, 42), 7, 9, 41, 25, 8, 6, 43.

English Literature.—23, 27, 4, 5, (13, 14), 26, 24, 18, (1, 7, 8, 16), (3, 22, 28), (17, 20), 37, (12, 29), (6, 25, 36), (45, 48), (10, 19), 2, 30, 31, 9, 15, (21, 41), 11, (46, 50), 43, 42, 47.

History.—13, 14, (5, 17, 22), (4, 7), (20, 25), 8, 12, 63, 37, 6, (10, 18, 24), 46, (2, 9, 19, 45), (1, 60), 11, 16, 3, 15, 21, 48, 61, 31, 47.

Geography.—34, 35, (18, 22), 13, (20, 50), 5, 45, 7, (8, 41, 46), 14, (9, 11, 44, 48, 49), (1, 4, 24, 37), (17, 60), (30, 43, 63), 3, (6, 12, 16, 42, 61), (10, 25, 31, 47), (2, 15, 19, 21, 36, 40, 62).

Botany.—29, 28, 23, (13, 26), (14, 17), 20, (27, 18), 19, 16, 22, 15.

Chemistry.—(13, 19), 29, 14, 18, (23, 26, 46), 15, 20, 22, 16, 17.

LIST OF THE PRINCIPAL DONATIONS

TO THE

LIBRARY AND COLLECTIONS OF THE FACULTIES OF ARTS AND APPLIED SCIENCE.

FROM MAY, 1880, TO MAY, 1881.

1.—TO THE LIBRARY.

Director of L'Ecole National des Ponts et Chaussées, Paris	Collection de Dessins. 19 Planches. fol.
do do	Legendes Explicatives. 16me Livraison. 8vo. pap.
Director of the New York Meteorological Observatory	Abstracts of Registers from Self-Recording Instruments, Decr., 1879, and January, 1880. 2 vols. 4to.
Trustees of the British Museum	Lepidoptera Heterocera, Part III. 4to.
Engineers' Club of Philadelphia	Proceedings', Nos. 1–5 to vol. I (1879–80). 5 pam. 8vo.
His Excellency The Governor General of the Dominion of Canada	London University Calendar for the year 1880. 8vo.
Graduates in Arts and Applied Science	Photographs of the Graduating Classes in Arts and Applied Science, 1880. 4to.
Hon. P. J. O. Chauveau	L'Instruction Publique en Canada, Précis Historique et Statistique. 8vo.
C. H. Stephen, Esq., B.C.L.	The Quebec Law Digest. 8vo.
North of England Institute of Mining Engineers	Transactions, Vols. 8–12, 14–20, and 22–28, 1859–60 to 1878–79. 8vo.
Institution of Civil Engineers, London, Eng.	Minutes of Proceedings. Vol. LIX. 8vo.
Sandford Fleming, Esq., C.M.G.	Report and Documents in reference to the Canadian Pacific Railway. 1880. 8vo.
Queen's University, Kingston, Ont.	Calendar for 1880–81. 12mo.
T. C. Chamberlin, Esq., Chief Geologist of Wisconsin, U.S.	Geology of Wisconsin. Survey of 1873–79. Vol. III. Large 8vo. Accompanied by an Atlas of 13 Maps.
Messrs. Lyon & Co., Publishers, Guelph, Ont.	The History of the Sea. With over 250 Illustrations. Large 8vo.
Edinburgh University	Calendar for 1880–81. 12mo.
Government of the Province of Quebec	Journals of the Legislative Assembly. Session 1879. 8vo.
do do	Municipal Code of the Province of Quebec. 12mo.
United States Government, Department of the Interior	Eleventh Annual Report of the U.S. Geological and Geographical Survey of the Territories. 8vo
do do	Report on the Lands of the Arid Region of the United States. By J. W. Powell. 4to.
John Harris, Esq., Montreal	The Circle and Straight Line. Supplement, 8vo.
do do	Centrifugal Force and Gravitation. Appendix. Supplement A. 8vo.
Dr. G. M. Dawson	Notes on the Distribution of some of the more important Trees of British Columbia 8vo. pam.
Smithsonian Institution	Smithsonian Contributions to Knowledge. Vol. XXII. 4to.
do do	Smithsonian Miscellaneous Collections. Vols. XVI. and XVII. 8vo.

McGill University Graduates' Society	Packard's Zoology for Students and General Readers, 8vo.
do do	Todd's Parliamentary Government in the British Colonies. 8vo.
do do	McAlpine's Biological Atlas. 4to.
do do	Mill's Representative Government. 8vo.
Francis Parkman, Esq.	Historical Works. 8 Vols. 8vo.
Institution of Civil Engineers, London, Eng.	Minutes of Proceedings. Vols. LX. and LXI. 8vo.
Cobden Club, London, Eng.	Mongredien's Western Farmer of America. pam. 18mo. (3 Copies).
Government of the Dominion of Canada	Sessional Papers. Nos. 1–11 to Vol. XIII. 11 Vols. 8vo.
do do	Statutes of Canada, 1880. Eng. and French. 2 Vols. 8vo.
do do	Journals of the House of Commons. Vol. XIV. 1880. With Appendix. 2 Vols. 8vo.
do do	Journals of the Senate of Canada, 1880. Vol. XIV. 8vo.
United States Government	Annual Report of the Chief Signal Officer to the Secretary of War for the year 1879. 8vo.
do do	Report of the Superintendent of the U.S. Coast Survey for the year ending June, 1876. 2 Vols. 4to
William Wood, Esq., Bowden, Eng., per Peter Redpath, Esq.	Life of Lord Beaconsfield, by J. P. O'Connor. 8vo.
James Hall, Esq., U.S. Geologist	Natural History of New York. Palæontology. Vol. V. Part II. Text and Plates. 2 Vols. 4to.
John Collet, Esq., Chief of Bureau	First Annual Report of the Department of Statistics and Geology of the State of Indiana, 1879. 8vo.
Edwin Gilpin, Jr., Esq., A.M.	The Mines and Mineral Lands of Nova Scotia. 8vo.
Major Latour	Annuaire de Ville-Marie. 18 pam. 12mo
Prof. J. W. Powell, U.S. Geologist in Charge.	Report on the Geology of the Henry Mountains. By G. K. Gilbert. 4to.
Dr. F. V. Hayden, U.S. Geologist	Leidy's Fresh-Water Rhizopods of North America. 4to.
Principal Dawson, LLD., F.R.S.	9 Vols., comprising works on historical, geological, meteorological and other subjects.
do do	Sheep Husbandry in the South. By J. L. Hayes. pam. 8vo.
do do	Early Chapters of Cayuga. History of Jesuit Missions in Goi-o-gourn, 1656–1684. pam. 8vo.
Smithsonian Institution	Annual Beport of the Board of Regents for the year 1878. 8vo.
United States Government	Annual Report of the Chief of Engineers to the Secretary of War for the year 1879. Parts I–III. 3 Vols. 8vo.
do do	Report of the Commissioner of Fisheries for 1878. 8vo.
do do	History of the North American Pinnipeds. By Joel A. Allen. 8vo.
do do	Bulletin of the U.S. Geological and Geographical Survey of the Territories. No. 4 to Vol. V. 8vo.
Peter Redpath, Esq.	461 Vols., being Additions to and Continuations of the Public Records in the "Peter Redpath Historical Collection."
Trustees of the British Museum	Illustrations of Typical Specimens of Lepidoptera Heterocera in the Collection of the British Museum. Part IV. 4to.
Government of the Province of Quebec	Statutes of the Province of Quebec, 1880. Eng. and French. 2 Vols. 8vo
do do	Journals of the Legislative Council. Vol. XIV. 8vo.
McGill College Book Club	75 Vols., comprising recent publications on various subjects.
H. M. Secretary of State for India	Great Trigonometrical Survey of India. Vol. V. 4to.
Royal Society of London	Transactions. Vol. 170 (Parts 1 and 2) and Vol. 171 (Part 1st). 4to.
do do	Proceedings. Nos. 197–199 to Vol. XXIX., and Nos. 200–205 to Vol. XXX. 9 pam. 8vo.

Royal Dublin Society	Scientific Transactions. New Series. Parts 1–12 to Vol. I., and parts 1 and 2 to Vol. II. 4to.
do do	Scientific Proceedings. New Series. Parts 1–32 to Vol. I., and parts 1–6 to Vol. II. 8vo.
Frank Adams, Esq.	The Chemical News for 1876–1879. 7 Vols. 4to.
Prof. Harrington, Ph. D	The Chemical News for 1860–1864. 9 vols. 4to.
N. H. Winchell, Esq.	Geological and Natural History Survey of Minnesota. Eighth Annual Report for 1879. 8vo.
W. B. Hackenburg, Esq	Statistics of the Jews of the United States, 1880. pam. 8vo
Lords Commissioners of the Admiralty	Greenwich Observations, 1878. 4to.
do do do	Greenwich Astronomical Results, 1878. 4to.
do do do	Greenwich Magnetical and Meteorological Observations, 1878. 4to.
Cayuga County Historical Society	Sullivan's Campaign in 1779. pam. 8vo.
James Hall, Esq., U. S. Geologist	Twenty-eighth and Thirtieth Annual Reports of the New York State Museum of Natural History, 1879. 2 Vols. 8vo. pap.
Royal Colonial Institute	Reports of Proceedings, 1877–1880. Vols. IX.–XI. 8vo.
A. R. C. Selwyn, Esq., F.R.S.	Le Canada et L'Exposition Universelle de 1855. 8vo.
do do	Reports and Catalogues of the Paris Exhibition. 12 pam.
do do	Mines and Mineral Statistics of New South Wales. 1875. 8vo. pap.
do do	Explorations and Surveys. Report of Progress. 1878–79. 8vo.
New Shakspere Society	Shakespear's Centurie of Prayse. By C. M. Ingleby. 4to. pap.
University of Toronto	Examination Papers, 1880. 8vo.
Government of the Province of Quebec	Sessional Papers. 1878–79. Vol. XII. 8vo. (2 Copies).
McGill University Graduates' Society	24 vols., including recent works on historical, literary and scientific subjects.
Prof. Bovey, M.A	Cribwork in Canada. pam. 8vo.
Committee of the Cobden Club	Financial Reform Almanack for 1881. pam. 8vo. (2 Copies).
American Institute of Mining Engineers	Transactions. May, 1879, to February, 1880. Vol. VIII. 8vo. pap.
Minister of Education, Ont.	Report on the Public and High Schools, also on the Normal and Model Schools for 1879. pam. 8vo.
T. Sterry Hunt, Esq., LL.D	Catalogue of Scientific Serials of all Countries. 1633–1876. By S. H. Scudder. 8vo.
do do	Memoirs of the Geological Survey of Kentucky. By N. S. Shaler. Vol. I. 4to.
Literary and Historical Society of Quebec	Transactions. Sessions 1861–1880. Vols. V-VII. 8vo.
R. A. Ramsay, Esq., B.C.L	Historical Documents of the Quebec Literary and Historical Society. 2 vols. 8vo.
Frank Adams, Esq.	Chemical News. Vols. 11 and 12. 4to. pap.
United States Government	Report of the Superintendent of the U. S. Coast Survey, shewing the Progress of the work for the Fiscal year ending June, 1877.
McGill College Book Club	58 Vols., comprising recent publications on various subjects.
Académie Impériale des Sciences de St. Petersbourg	Bulletin. Tome XXVII. Nos. 1 and 2. 2 pam. 4to.
Government of the Dominion of Canada	Annual Report of the Library Commissioners, and Librarian, for the year 188c. Halifax, N.S. pam. 8vo.
Rev. A. B. Grosart	Prospectus of the Huth Library. pam. 4to.
Trustees of the Mason Science College, Birmingham	Calendar for the Session of 1880–81. 8vo.
G. W. Stephens, Esq	106 Vols., being a Collection of Parliamentary Books.
John Collet, Esq., Indianopolis, Ind	Second Annual Report of the Department of Statistics and Geology, 1880. State of Indiana, U. S. 8vo.
His Excellency The Governor General of the Dominion of Canada	London University Calendar for the year 1881. 8vo.

C. H. Stephens, Esq.	Law and Practice of Joint Stock Companies Under the Canadian Acts. 8vo.
Institution of Civil Engineers, London, Eng.	Minutes of Proceedings. Vols. LXII. and LXIII 8vo.
J. W. Powell, Esq., through the Department of the Interior, Washington, U.S.	Introduction to the Study of Indian Languages. 4to.

II.—TO THE MUSEUM.

From the Director of the Geological Survey.	377 Specimens of Canadian Fossils and 97 Specimens Economic Rocks and Minerals.
" Edmund De Cew, Esq., De Cewville, Ont	Specimens of *Eurypterus Remipes*.
" T. Bland, Esq., New York	Specimens of Vegetable Wax, Mineral Wool, Crystallized Salt and Land Shells of West Indies.
" Prof. Morse, Salem, Mass.	*Lingula Anatina* in alcohol.
" R. T. Fowler, Esq., Montreal	*Spongilla* from Scottsboro
" J. F. Whiteaves, F.G.S.	Specimens of Shells, Echinoderms and Corals.
" Heirs of the late Dr. McCulloch	152 species of Birds, 18 Mammals, and other Zoological Specimens, being the collection of the late Dr. M. McCulloch of Montreal.
" C. Gibb, Esq., B.A., Abbotsford	Collection of Corals and Echinoderms from the West Indies.
Lieut.-Col. Grant, Hamilton, Ont	Collection of Fossils from the Niagara and Clinton Formations.
Prof. Marsh, New Haven, U.S.	Casts of *Hesperornis*.
W. S. Davidson, Esq., Edinburgh, Scotland	Specimen of *Apteryx* from New Zealand. Egg of Emeu from Australia.
Prof. E. Cope, Philadelphia	Specimens of Permian and Tertiary Fossils.

Large and valuable collections have also been obtained by exchange with the American Museum of Natural History New York; R. Bell, Esq., of London, England; R. Damon, of Weymouth, England; Mr. Chatfield of Syracuse, N.Y., and others.

Valuable collections have also been obtained by purchase from Messrs. Ward and Howell Rochester, Mrs. Hartt of Brooklyn, and Edmund De Cew, Esq., of DeCewville, Ontario.

Many minor donations of single specimens are not included in the above list.

AMENDED STATUTES OF THE UNIVERSITY, OF THE 23rd OCTOBER, 1880, IN RESPECT OF THE FELLOWS OF THE UNIVERSITY.

CHAPTER III.

OF THE FELLOWS.

The Fellows of the University shall be :—

(1) The Deans of the respective Faculties,—

(2) Any Acting or Vice Dean of a Faculty, or any Registrar of the Faculty of Law or Medicine, whom the Governors may find it requisite to appoint as such Fellow,—not more than one such appointment, however, to subsist at any time for any Faculty,—

(3) Two Members of the Faculty of Arts, and one Member of each of the other Faculties, to be elected as such from time to time for a term of four years by their respective Faculties,—

(4) The Principal of the McGill Normal School, so long as it shall remain affiliated with the University,—

(5) The several representatives of every Affiliated College in connection with the University, to be named as hereinafter is provided,—

(6) Eight Members of Convocation, Graduates of the University, of at least three years' standing, two in Law, two in Medicine, two in Arts, and two in Applied Science, to be elected by the qualified Graduate Members of Convocation, from time to time, as hereinafter is provided,—

(7) Such other Members of Convocation, not more than seven in number, as the Governors may so appoint, for the term of four years,—

(8) And the Chairman of the Protestant Board of School Commissioners for the City of Montreal, if so appointed by the Governors, but not otherwise."

CHAPTER V.

OF THE CONVOCATION.

Section Four of Chapter Five is repealed, and the following provisions are substituted therefor,—to be read after Sections Five and Six of such Chapter,—which again are to be taken as numbered Four and Five respectively :—

6.—There shall be prepared and kept by such Officer or Officers, and in such form as the Governors by Regulation shall direct, a Register of all living members of Convocation, and of the calling, residence and Post Office address of each, so far as ascertainable.

7.—A Copy of this Statute, with such explanatory instructions as the Governors may deem requisite, shall be mailed or otherwise communicated, on or before the 1st day of December next, to every Member of Convocation whose address is then known or supposed so to be.

8.—Members of Convocation, presently Graduates of the University, and who on before the day of the next meeting of Convocation for the conferring of Degrees in Law and Medicine, shall pay such Registry Fee (whether for the current year, or by way of commutation) as the Governors by Regulation shall have ordained in that behalf, shall alone be held qualified to vote at the ensuing election of Fellows hereby provided for.

9.—A voting Paper for such election, in such form and with such explanatory instructions as the Governors by Regulation shall have ordered or authorized, shall be sent by mail to every such qualified Graduate, who on or before the first day of February next shall have paid such Registry Fee and indicated the Post Office whereat he wishes to be addressed, at his Post Office so indicated, on or before the 1st day of March next; or at the request of any such qualified Graduate, the same may at any time on or before such day for conferring of Degrees in Law and Medicine, be furnished him in any way that may be convenient.

10.—By such Voting Paper, duly returned on or before such day for conferring of Degrees in Law and Medicine, and being duly filled up, signed and attested,—the whole as such Regulations shall require,—each such qualified Graduate may vote for not more than eight Members of Convocation, Graduates of the University, of not less than three years' standing, not more than two of them being such in Law, Medicine, Arts and Applied Science respectively.

11.—Any vote so tendered for more than eight in the whole, or for more than two as being Graduates in each Faculty respectively, or for any one not such Graduate as so being, or for any Graduate not having at least three years' standing from the date of his earliest Degree conferred by the University, shall be rejected.

12.—The Voting Papers thus returned shall be carefully examined by Scrutineers, to be named to that end by the Governors, and shall by such Scrutineers be laid before Convocation at its next meeting for the conferring of Degrees in Arts and Applied Science, with their report shewing (so far as possible) what two Graduates in each Faculty have received the highest number of the votes cast; and also how many votes have been cast for each.

13.—Should such report shew that the Scrutineers cannot say that two Graduates in any Faculty have such highest number of votes, from the fact that two or more have an equal number of votes, the question of the tie so occurring shall be resolved at such Meeting by lot.

14.—The two Graduates in each Faculty indicated by such report, or by lot (as the case may be), shall thereupon become Fellows of the University, and shall be received into and be Members of the Corporation as such Fellows.

15.—The four (out of such eight) Fellows who shall have

received the highest number of the votes cast, shall be such Fellows for the term of two years; and the other four shall be such for one year.

16.—All questions of tie arising in respect of such term of Office as Fellow, shall be resolved at such Meeting by lot.

17.—Every year thereafter, election to fill the places of the four Fellows so vacating Office, and also to fill any vacancies otherwise previously during the year occurring, shall be held in the like manner, that is to say :—

18.—Members of Convocation, Graduates of the University, who, on or before the day of the Meeting of Convocation for the conferring of Degrees in Law and Medicine, shall have duly paid their Registry Fee, whether for the current year or by way of commutation, shall alone be held qualified to vote.

19.—Voting Papers, with all requisite instructions, shall be duly sent by mail to all such qualified Graduates, or at their request otherwise furnished them, as by Regulation of the Governors in that behalf shall hereafter be prescribed; and, being duly filled up, signed, attested and returned, on or before the day of the next meeting of Convocation for the conferring of Degrees in Law and Medicine, shall avail as votes cast for such election. But any vote so tendered for more than the proper number of vacancies in the whole, or for any Graduate or Graduates in a wrong Faculty, or for any one not a Graduate, as so being, or for any Graduate not having at least three years' standing from the date of his earliest Degree conferred by the University, shall be rejected.

20.—After due examination, such returned Voting Papers shall by the Scrutineers (thereto named by the Governors) be laid before Convocation at its next Meeting for the conferring of Degrees in Arts and Applied Science, with their Report shewing (so far as possible) upon whom the highest aggregate vote in respect of each vacancy has fallen; and, if this cannot be declared, from the fact of two or more having in any case an equal vote, the question of the tie so occurring shall be resolved at such meeting by lot.

21.—The Graduates indicated by such report or by lot (as the case may be) shall thereupon become Fellows of the University, and shall be received into and be members of the Corporation, as such Fellows,—for the term of two years, when the vacancy is in ordinary course, and for the unexpired term when the vacancy has occurred otherwise.

22.—The present Representative Fellows in Law, Medicine, Arts and Applied Science respectively shall remain such through the yearly term for which they were elected.

23.—All Regulations of the Governors for giving effect in anywise to the foregoing provisions, shall have force and effect as though set forth herein.

CONTENTS.

I. GENERAL ANNOUNCEMENTS.

Benefactors, Calendar, Governing Body, Officers of Instruction, General Statement .... Page 1 to 16.

II. FACULTY OF ARTS.

Admission	18
Apparatus (Philosophical)	49
Attendance	35
Boarding houses	34
Conduct	35
Course of Study	17
Degrees	25
Examinations	25
Exemptions from Fees	24
" in Course of Study	28
Exhibitions	20–22
Fees	37
Honours	31

LECTURES :—

" Ordinary	38–44
" Honour	45–49
Library	36
Matriculation	18
Medals	31
Museum	36–49
Prizes	31
Scholarships	20
Time Table	52

III. FACULTY OF APPLIED SCIENCE.

Admission	54
Course of Study	57
Courses of Lectures	61
Degrees	58
Examinations	58
Exhibitions and Prizes	55
Fees	60
List of Models	68
Text Books	68
Time-table	71

IV. FACULTY OF MEDICINE.

Admission	73
Courses of Lectures	76
Degrees	80
Examinations	82
Fees	84
Hospitals	87
Medals and Prizes	84
Medical Society	87
Museum and Library	86
Past Session	90
Qualifications for Degrees	80
Time-table	96

V. FACULTY OF LAW.

Admission	97
Course of Study	98
Degrees	98–103
Fees	102
Regulations	100

VI. UNIVERSITY SCHOOL EXAMINATIONS.

For Associate in Arts and Junior Certificate	105
Higher Examination of Women	109

VII. MCGILL NORMAL SCHOOL.

Admission, &c	113
Course of Study	116
Model Schools	121
Regulations	119

VIII. UNIVERSITY LISTS, &c.

Passed the University Examinations, 1880–81	124
Exhibitions and Scholarships	127
Prizes, Honours and Standing, 1880-81	128
Graduates	148
Students	164
School Certificates	170
Donations to Library and Museum	177

EXAMINATION PAPERS

OF THE

McGILL UNIVERSITY,

MONTREAL.

SESSION OF 1880-81.

Montreal:
PRINTED BY JOHN LOVELL & SON
ST. NICHOLAS STREET.
1881.

ORDER OF EXAMINATION PAPERS.

1. FACULTY OF ARTS.

PAGE

MATRICULATION 5
SCHOLARSHIPS AND EXHIBITIONS 9
CLASSICS :—*Ordinary* 39
" *Honour* 58
MATHEMATICS AND NATURAL PHILOSOPHY :—*Ordinary* 72
" " " *Honour* 82
ENGLISH LITERATURE :—*Ordinary* 97
" " *Honour* 104
LOGIC, AND MENTAL AND MORAL PHILOSOPHY :—*Ordinary* 115
" " " " *Honour* 119
FRENCH :—*Ordinary* 125
" *Honour* 133
GERMAN :—*Ordinary* 137
" *Honour* 142
SPANISH 145
HEBREW AND CHALDEE 147
GEOLOGY AND BIOLOGY.—*Ordinary* 153
" *Honour* 155
CHEMISTRY 151

2. FACULTY OF APPLIED SCIENCE.

MATRICULATION AND SCOTT EXHIBITION 160
CIVIL AND MECHANICAL ENGINEERING 161
MINING ENGINEERING AND PRACTICAL CHEMISTRY 209
LORNE MEDAL .....

3. FACULTY OF MEDICINE.

SESSIONAL AND PRIMARY SUBJECTS 219
FINAL SUBJECTS 221

4. FACULTY OF LAW.

FIRST YEAR 224
SECOND AND THIRD YEARS 226

5. SCHOOL EXAMINATIONS.

FOR CERTIFICATE AND ASSOCIATE IN ARTS 230
" SENIOR ASSOCIATE IN ARTS .....

MATRICULATION EXAMINATION, 1880.

CLASSICS.

THURSDAY, SEPTEMBER 16TH:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

(A) 1. Translate, Homer, Iliad, Bk. I.:—

Ὣς φάτο· Πηλείωνι δ' ἀχος γένετ', ἐν δὲ οἱ ἦτορ
στήθεσσιν λασίοισι διάνδιχα μερμήριζεν,
ἢ ὅγε φάσγανον ὀξὺ ἐρυσσάμενος παρὰ μηροῦ
τοὺς μὲν ἀναστήσειεν, ὁ δ' Ἀτρείδην ἐναρίζοι
ἠὲ χόλον παύσειεν ἐρητύσειέ τε θυμόν.
εἷος ὁ ταῦθ' ὥρμαινε κατὰ φρένα καὶ κατὰ θυμὸν,
ἕλκετο δ' ἐκ κολεοῖο μέγα ξίφος, ἦλθε δ' Ἀθήνη
οὐρανόθεν· πρὸ γὰρ ἧκε θεὰ λευκώλενος Ἥρη,
ἀμφω ὁμῶς, θυμῷ φιλέουσά τε κηδομένη τε.
στῆ δ' ὄπιθεν, ξανθῆς δὲ κόμης ἕλε Πηλείωνα,
οἴῳ φαινομένη· τῶν δ' ἄλλων οὔτις ὁρᾶτο.
θάμβησεν δ' Ἀχιλεὺς, μετὰ δ' ἐτράπετ', αὐτίκα δ ἔγνω
Παλλάδ' Ἀθηναίην· δεινὼ δέ οἱ ὄσσε φάανθεν.

2. Parse carefully the following words:—γένετο, οἱ, ὀξύ, ἀναστήσειεν, φρένα, κολεοῖο, οὐρανόθεν, στῆ.

(B) 1. Translate, Xenophon, Anabasis, Book I.:—

Κῦρος δέ, ἔχων οὓς εἴρηκα, ὡρμᾶτο ἀπὸ Σάρδεων· καὶ ἐξελαύνει διὰ τῆς Λυδίας σταθμοὺς τρεῖς, παρασάγγας εἴκοσι καὶ δύο, ἐπὶ τὸν Μαίανδρον ποταμόν. τούτου τὸ εὖρος δύο πλέθρα· γέφυρα δὲ ἐπῆν ἐζευγμένη πλοίοις ἑπτά. Τοῦτον διαβὰς ἐξελαύνει διὰ Φρυγίας σταθμὸν ἕνα, παρασάγγας ὀκτώ, εἰς Κολοσσάς, πόλιν οἰκουμένην, εὐδαίμονα καὶ μεγάλην. ἐνταῦθα ἐμεινεν ἡμέρας ἑπτά· καὶ ἦκε Μένων ὁ Θετταλὸς, ὁπλίτας ἔχων χιλίους καὶ πελταστὰς πεντακοσίους, Δόλοπας καὶ Αἰνιᾶνας καὶ Ὀλυνθίους. Ἐντεῦθεν ἐξελαύνει σταθμοὺς τρεῖς, παρασάγγας εἴκοσιν, εἰς Κελαινάς, τῆς Φρυγίας πόλιν οἰκουμένην μεγάλην καὶ εὐδαίμονα. ἐνταῦθα Κύρῳ βασίλεια ἦν καὶ παράδεισος μέγας, ἀγρίων θηρίων πλήρης, ἃ ἐκεῖνος ἐθήρευεν ἁρὸ ἵππου, ὁπότε γυμνάσαι βούλοιτο ἑαυτόν τε καὶ τοὺς ἵππους.

2. Parse carefully:—*εἴρηκα, ὡρμᾶτο, σταθμούς, εὖρος, ἐπῆν, διαβάς, πόλιν, εὐδαίμονα.*

(C) 1. Translate, Virgil, Æneid, Book I.:—

Lucus in urbe fuit media, lætissimus umbræ,
Quo primum, jactati undis et turbine, Pœni
Effodere loco signum, quod regia Juno
Monstrarat, caput acris equi; sic nam fore bello
Egregiam, et facilem victu per sæcula gentem.
Hic templum Junoni ingens Sidonia Dido
Condebat, donis opulentum et numine divæ;
Ærea cui gradibus surgebant limina, nexæque
Ære trabes; foribus cardo stridebat aënis.
Hoc primum in luco nova res oblata timorem
Leniit; hic primum Æneas sperare salutem
Ausus, et afflictis melius confidere rebus.
Namque, sub ingenti lustrat dum singula templo,
Reginam opperiens; dum, quæ fortuna sit urbi,
Artificumque manus inter se, operumque laborem
Miratur, videt Iliacas ex ordine pugnas,
Bellaque jam fama totum vulgata per orbem,
Atridas, Priamumque, et sævum ambobus Achillem.

2. Parse:—Urbe, lætissimus, jactati, effodere, monstrarat, fore, numine, ære, oblata, trabes.

(D) 1. Translate, Cicero, In Catilinam:—

Magna dis immortalibus habenda est atque huic ipsi Iovi Statori, antiquissimo custodi huius urbus, gratia, quod hanc tam taetram, tam horribilem tamque infestam rei publicae pestem totiens iam effugimus. Non est saepius in uno homine summa salus periclitanda rei publicae. Quam diu mihi consuli designato, Catilina, insidiatus es, non publico me praesidio, sed privata diligentia defendi. Quum proximis comitiis consularibus me consulem in campo et competitores tuos interficere voluisti, compressi conatus tuos nefarios amicorum praesidio et copiis, nullo tumultu publice concito: denique, quotienscumque me petisti, per me tibi obstiti, quamquam videbam perniciem meam cum magna calamitate rei publicae esse coniunctam.

2. Parse:—dis, habenda est, custodi, rei publicae, urbi, comitiis, voluisti, conatus, publice, conjunctam.

(E) 1. Decline the following nouns:—*δόξα, κριτής, δῶρον, νύξ,* filia, magister, dux, fides.

2. Write down the comparative and superlative of:—*κοῦφος, σοφός, ἐχθρός, ἡδύς, audax, acer, humilis, bonus.*

3. Decline the pronouns:—*ἐγώ, σύ*, ego, tu, sui.

4. (*a*) Define the terms transitive, intransitive, and deponent, as applied to verbs. (*b*) Give the perfect and supine of:—*lego, mitto, scribo, do.*

5. Write down the 1st Sing. Indic. of the Fut. Act., Aorist Act. and Perf. Act., of:—*γράφω, τάσσω, φιλέω.*

ENGLISH GRAMMAR.

MONDAY, SEPTEMBER 20TH:—MORNING, 9.30 TO 11.

Examiner,..... ..... CHAS. E. MOYSE, B.A.

[*First-year Matriculants are requested to answer the questions of group A; Second-year Matriculants, those of group B, together with* 2, 3 *and* 5 *of group A. Question* 3 *of group A is imperative on all.*]

"It *must* be written in a book," said I, encouraged by her manner. "The "mood was the *same*, the tense was the same; but the gradation of "meaning *was marked* in a way which a Greek *or* Latin grammarian "might have envied *as well as* admired."

A.

1. Underline those words of the above extract which are inflected.

2. Parse the italicized words.

3. Analyse the extract.

4. Classify the consonants of the English alphabet.

5. Explain the *suffixes* of,—speaker, drunkard, kingdom, spinster, lordship; the *prefixes* of,—become, aboard, mistake.

B.

1. In the extract at the head of the paper, what words come from foreign tongues? Write the word from which each is directly derived.

2. What is noteworthy in the history of *shall, morrow, vixen?*

3. Classify Compound nouns, and discuss the part they play in language.

ENGLISH HISTORY.

MONDAY, SEPTEMBER 20TH:—MORNING, 11 TO 12.15.

Examiner,.....CHAS. E. MOYSE, B.A.

[*First-Year Matriculants are requested to answer the questions of group A; Second-Year Matriculants those of group B, together with 2 and 4 of group A.*]

A.

1. When, since the Norman Conquest, has England, as a nation, been engaged in war against Scotland?

2. Name the sovereigns of the Plantagenet line, and mention one important event in the reign of each.

3. Display your knowledge of any *two* of the events of question 2?

4. State clearly what provoked the English to offer their throne to William III. How was he related to his predecessors? Note the leading incidents of his reign.

5. Why are the dates 1513, 1679, 1759 worthy of remembrance?

B.

1. Explain the terms tenant-in-capite thegn, scutage.

2. Write a short life of Archbishop Laud, *or* of Robert Clive.

3. What do you know concerning the Treaty of Troyes (1420), the Secret Treaty of Dover, the Cabal Ministry, the Test Act?

EXHIBITIONS AND SCHOLARSHIPS, 1880.

FIRST YEAR EXHIBITIONS.

GREEK.

THURSDAY, SEPTEMBER 16TH:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate:—Homer, Iliad, Bk. IV.:—

(A) Ὡς δ' ὅτ' ἀπὸ σκοπιῆς εἶδεν νέφος αἰπόλος ἀνὴρ
ἐρχόμενον κατὰ πόντον ὑπὸ Ζεφύροιο ἰωῆς·
τῷ δέ τ' ἀνευθεν ἐόντι μελάντερον ἠύτε πίσσα
φαίνετ' ἰὸν κατὰ πόντον, ἄγει δὲ τε λαίλαπα πολλὴν,
ῥίγησέν τε ἰδὼν ὑπό τε σπέος ἤλασε μῆλα·
τοῖαι ἅμ' Αἰάντεσσι διοτρεφέων αἰζηῶν
δήϊον ἐς πόλεμον πυκιναὶ κίνυντο φάλαγγες
κυάνεαι, σάκεσίν τε καὶ ἐγχεσι πεφρικυῖαι.
καὶ τοὺς μὲν γήθησεν ἰδὼν κρείων Ἀγαμέμνων.
καί σφεας φωνήσας ἔπεα πτερόεντα προσηύδα.

(B) Οἱ δ' ὅτε δή ῥ' ἐς χῶρον ἔνα ξυνιόντες ἵκοντο,
σύν ῥ' ἔβαλον ῥινοὺς, σὺν δ' ἔγχεα καὶ μένε' ἀνδρῶν
χαλκεοθωρήκων· ἀτὰρ ἀσπίδες ὀμφαλόεσσαι
ἔπληντ' ἀλλήλῃσι, πολὺς δ' ὀρυμαγδὸς ὀρώρει.
ἔνθα δ' ἅμ' οἰμωγή τε καὶ εὐχωλὴ πέλεν ἀνδρῶν
ὀλλύντων τε καὶ ὀλλυμένων, ῥέε δ' αἵματι γαῖα.
ὡς δ' ὅτε χείμαρροι ποταμοὶ κατ' ὄρεσφι ῥέοντες
ἐς μισγάγκειαν συμβάλλετον ὄβριμον ὕδωρ
κρουνῶν ἐκ μεγάλων, κοίλης ἐντοσθε χαράδρης·
τῶν δέ τε τηλόσε δοῦπον ἐν οὔρεσιν ἔκλυε ποιμήν·
ὡς τῶν μισγομένων γένετο ἰαχή τε πόνος τε.

2. Write down the name and scheme of the metre used by Homer, and scan the first four vss. of ext. (A), carefully marking the feet and quantities.

3. (*a*) Give as accurately as you can the meaning and derivation of the following epithets .—*Βοῶπις, ἀγκυλομήτης, ἀμύμων, ἀβλῆτα, ἀγελείη, παναίολος.* (*b*) Derive, and give the meaning of the following :—*τέττα, μήστωρες, δαΐφρονα, ἰόμωροι, ἐλατῆρι, ἔρισμα.* (*c*) Explain the formation and give the meaning of the following adverbs :—*παραβλήδην, ἔχαδε, ὄθεν, οἴκαδε, αὖτε, ἰφι, χαμαί, χαμᾶζε.*

4. Parse carefully the following verbs and give the Attic equivalents of any that are not Attic :—*οὖτα, βλῆτο, ἔλεν, ἔσαν, ὦρσε, ἧσο, ἔμεν, ὄρσευ, βάν, κάμον, πάγη, χάνοι.*

5. Translate :—Xenophon, Anabasis, Bk. II. :—

(C) *Ἀκούσας δὲ ὁ Τισσαφέρνης ἔφη· Ταῦτα ἐγὼ ἀπαγγελῶ βασιλεῖ καὶ ὑμῖν πάλιν τὰ παρ' ἐκείνου· μέχρι δ' ἂν ἐγὼ ἥκω, αἱ σπονδαὶ μενόντων· ἀγορὰν δὲ ἡμεῖς παρέξομεν. Καὶ εἰς μὲν τὴν ὑστεραίαν οὐχ ἥκεν· ὥρᾳ δ' οἱ Ἕλληνες ἐφρόντιζον· τῇ δὲ τρίτῃ ἥκων ἔλεγεν, ὅτι διαπεπραγμένος ἥκοι παρὰ βασιλέως δοθῆναι αὐτῷ σώζειν τοὺς Ἕλληνας, καίπερ πάνυ πολλῶν ἀντιλεγόντων, ὡς οὐκ ἄξιον εἴη βασιλεῖ ἀφεῖναι τοὺς ἐφ' ἑαυτὸν στρατευσαμένους. Τέλος δὲ εἶπε, καὶ νῦν ἔξεστιν ὑμῖν πιστὰ λαβεῖν παρ' ἡμῶν ἢ μὴν φιλίαν παρέξειν ὑμῖν τὴν χώραν καὶ ἀδόλως ἀπάξειν εἰς τὴν Ἑλλάδα ἀγορὰν παρέχοντας· ὅπου δ' ἂν μὴ ᾖ πρίασθαι, λαμβάνειν ὑμᾶς ἐκ τῆς χώρας ἐάσομεν τὰ ἐπιτήδεια. Ὑμᾶς δ' αὖ ἡμῖν δέησει ὁμόσαι ἢ μὴν πορεύεσθαι ὡς διὰ φιλίας ἀσινῶς, σῖτα καὶ ποτὰ λαμβάνοντας, ὁπόταν μὴ ἀγορὰν παρέχωμεν, ἣν δὲ παρέχωμεν ἀγοράν, ὠνουμένους ἔξειν τὰ ἐπιτήδεια. Ταῦτα ἔδοξε, καὶ ὤμοσαν καὶ δεξιὰς ἔδοσαν Τισσαφέρνης καὶ ὁ τῆς βασιλέως γυναικὸς ἀδελφὸς τοῖς τῶν Ἑλλήνων στρατηγοῖς καὶ λοχαγοῖς καὶ ἔλαβον παρὰ τῶν Ἑλλήνων. Μετὰ δὲ ταῦτα Τίσσαφέρνης εἶπε, Νῦν μὲν δὴ ἄπειμι ὡς βασιλέα· ἐπειδὰν δὲ διαπράξωμαι ἃ δέομαι, ἥξω συσκευασάμενος ὡς ἀπάξων ὑμᾶς εἰς τὴν Ἑλλάδα καὶ αὐτὸς ἀπιὼν ἐπὶ τὴν ἐμαυτοῦ ἀρχήν.*

6. Translate and explain the construction of the following extt. :—(*a*) *τὸ στράτευμα ἐπορίζετο σῖτον * * * κόπτοντες τοὺς βοῦς καὶ ὄνους.* (*b*) *ἴσθι μέντοι ἀνόητος ὤν, εἰ οἴει ἂν τὴν ὑμετέραν ἀρετὴν περιγενέσθαι τῇ βασιλέως δυνάμεως.* (*c*) *οἶμαι γὰρ ἂν οὐκ ἀχαρίστως μοι ἔξειν οὔτε πρὸς ὑμῶν οὔτε πρὸς τῆς Ἑλλάδος ἁπάσης.*

7. Distinguish between *ὡς* and *ὡς*, *κῆρ* and *κήρ*, *αὐτῆς* and *αὐτῆς*, *βίος* and *βιός*, *ἦ*, *ἦ*, *ᾗ* and *ἡ*; also between *ἄξιον εἴη βασιλεῖ* and *ἄξιον εἴη βασιλέως*, *φιλίαν τὴν χώραν* and *τὴν φιλίαν χώραν*, *ὡς ἀπάξων ὑμᾶς* and *ἀπάξω' ὑμᾶς*, *συμβουλεύομεθά σοι* and *συμβουλεύομέν σοι.*

8. Translate:—Demosthenes, Philippic I.:—

(D) Τίνος οὖν ἕνεκα ταῦτα λέγω; ἵν' εἰδῆτε, ὦ ἄνδρες Ἀθηναῖοι, καὶ θεησησθε, ὅτι οὐδὲν οὔτε φυλαττομένοις ὑμῖν ἐστὶ φοβερόν, οὔτ', ἂν ὀλιγωρῆτε, τοιοῦτον, οἷον ἂν ὑμεῖς βούλησθε, παραδείγμασι χρώμενοι τῇ τότε ῥώμῃ τῶν Λακεδαιμονίων, ἧς ἐκρατεῖτε ἐκ τοῦ προσέχειν τοῖς πράγμασι τὸν νοῦν, καὶ τῇ νῦν ὕβρει τούτου, δι' ἣν ταραττόμεθα ἐκ τοῦ μηδὲν φροντίζειν ὧν ἐχρῆν· εἰ δέ τις ὑμῶν, ὦ ἄνδρες Ἀθηναῖοι, δυσπολέμητον οἴεται τὸν Φίλιππον εἶναι, σκοπῶν τό τε πλῆθος τῆς ὑπαρχούσης αὐτῷ δυνάμεως, καὶ τὸ τὰ χωρία πάντα ἀπολωλέναι τῇ πόλει, ὀρθῶς μὲν οἴεται· λογισάσθω μέντοι τοῦθ', ὅτι εἴχομέν ποτε ἡμεῖς, ὦ ἄνδρες Ἀθηναῖοι, Πύδναν καὶ Ποτίδαιαν καὶ Μεθώνην καὶ πάντα τὸν τόπον τοῦτον οἰκεῖον κύκλῳ, καὶ πολλα τῶν μετ' ἐκείνου νῦν ὄντων ἐθνῶν, αὐτονομούμενα καὶ ἐλεύθερα ὑπῆρχε· καὶ μᾶλλον ἡμῖν ἐβούλετ' ἔχειν οἰκείως, ἢ' κείνῳ. εἰ τοίνυν ὁ Φίλιππος τότε ταύτην ἔσχε τὴν γνώμην, ὡς χαλεπὸν πολεμεῖν ἐστὶν Ἀθηναίοις, ἔχουσι τοσαῦτα ἐπιτειχίσματα τῆς αὐτοῦ χώρας, ἔρημον ὄντα συμμάχων, οὐδὲν ἂν, ὧν νυνὶ πεποίηκεν, ἔπραξεν, οὐδὲ τοσαύτην ἐκτήσατο δύναμιν.

9. (*a*) State wlat you know of the events which led to the delivery of the *Philippics*. (*b*) Explain the meaning of the following, giving the derivation where you can:—(1) *τὴν εἰρωνείαν*. (2) *ὁ ἐν ἡλικίᾳ στρατεύεσθαι*. (3) *τὰς ἐπιστολιμαίους δυνάμεις*. (4) *τοὺς ἐτησίας*. (5) *τὴν τῶν Διονυσίων ἑορτήν*. (6) *χορηγός*. (*c*) *ἄγων καὶ φέρων*:—Explain, and express this phrase in Latin.

LATIN.

THURSDAY, SEPTEMBER 16TH:—AFTERNOON, 2 TO 5.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate:—In Catilinam, III. & IV.

(A) Quibus pro tantis rebus, Quirites, nullum ego a vobis praemium virtutis, nullum insigne honoris, nullum monumentum laudis postulabo praeterquam huius diei memoriam sempiternam. In animis ego vestris omnes triumphos meos, omnia ornamenta honoris, monumenta gloriae, laudis insignia condi et collocari volo. Nihil me mutum potest delectare, nihil tacitum, nihil denique eius modi, quod etiam minus digni adsequi possint. Memoria vestra, Quirites, res nostrae alentur, sermonibus crescent, litterarum monumentis inveterascent et corroborabuntur: eamdemque diem intelligo, quam spero aeternam fore, propagatam esse et ad salutem urbis et ad memoriam consulatus mei, unoque tempore in hac re publica duos cives exstitisse, quorum alter fines vestri imperii non terrae, sed caeli

regionibus terminaret, alter eiusdem imperii domicilium sedesque servaret. Sed quoniam earum rerum, quas ego gessi, non eadem est fortuna atque condicio quae illorum, qui externa bella gesserunt, quod mihi cum iis vivendum est, quos vici ac subegi, isti hostes aut interfectos aut oppressos reliquerunt, vestrum est, Quirites, si caeteris facta sua recte prosunt, mihi mea ne quando obsint providere. Mentes enim hominum audacissimorum sceleratae ac nefariae ne vobis nocere possent ego providi: ne mihi noceant vestrum est providere.

2. (*a*) Before whom were these two orations of Cicero severally delivered, and with what results? (*b*) Give a short account of the conspiracy of Catiline. To what political parties did Catiline and Cicero respectively belong? (*c*) *Duos cives*:—who were they?

3. Explain carefully the following terms:—Quirites, patres conscripti, tribunos aerarios, scribas, equites Romanos, forum, campus, haec sedes honoris, ornamenta honoris, senatus consultum, Saturnalia, fata Sibyllina.

4. Distinguish between—*referre* and *deferre* ad senatum; templa ac delubra; litteris et mandatis; senatus and curia; civitas and urbs; descriptum and distributum; perpetuum and sempiternum.

5. Translate:—Ovid, Fasti, Bk. I.

(B)

Pluris opes nunc sunt, quam prisci temporis annis;
Dum populus pauper, dum nova Roma fuit;
Dum casa Martigenam capiebat parva Quirinum,
Et dabat exiguum fluminis ulva torum.

Jupiter angusta vix totus stabat in aede;
Inque Jovis dextra fictile fulmen erat.
Frondibus ornabaut, quae nunc Capitolia gemmis;
Pascebatque suas ipse senator oves.
Nec pudor in stipula placidam cepisse quietem,
Nec fœnum capiti supposuisse, fuit.
Jura dabat populis posito modo consul aratro,
Et levis argenti lamina crimen erat.
At postquam Fortuna loci caput extulit hujus,
Et tetegit summos vertice Roma Deos:
Creverunt et opes, et opum furiosa cupido;
Et, quum possideant plurima, plura volunt.
Quaerere ut absumant, absumta requirere certant;
Atque ipsae vitiis sunt alimenta vices.
Sic quibus intumuit suffusa venter ab unda,
Quo plus sunt potae, plus sitiuntur aquae.

6. Write short explanatory notes on the historical allusions in ext. (B).

7. Give the derivation and meaning of the following words:—Annalibus fastos, habenas, trabeati, nefastus, kalendas, Idibus, nonarum, biceps, inacti gemma, lamina.

8. Translate:—Horace, Odes, Bk. I.:—

(C)

Sic te diva potens Cypri,
Sic *fratres Helenae* lucida sidera,
Ventorumque regat *pater*,
Obstrictis aliis praeter *Iapyga*:
Navis, quae tibi creditum
Debes Virgilium, finibus Atticis
Reddas incolumem precor,
Et serves animae dimidium meae.
Illi robur et aes triplex
Circa pectus erat qui fragilem truci
Commisit pelago ratem
Primus, nec timuit praecipitem *Africum*
Decertantem *Aquilonibus*,
Nec *tristes Hyadas*, nec *rabiem Noti*,
Quo non arbiter Hadriae
Major, tollere seu ponere vult freta.
Quem Mortis timuit gradum
Qui siccis oculis monstra natantia,
Qui vidit mare turgidum et
Infames scopulos *Acroceraunia*?
Nequicquam deus abscidit
Prudens Oceano dissociabili
Terras si tamen impiae
Non tangenda rates transiliunt vada.

Audax omnia perpeti
Gens humana ruit per vetitum nefas.
Audax *Iapeti genus*
Ignem fraude mala gentibus intulit.

9. (*a*) Scan the first two verses of extract (C), naming the metre used. (*b*) Write explanatory notes on the words in italics in extract (C). (*c*) On what occasion was this ode written? (*d*) Construe:—reddas, serves; audax omnia perpeti; potens Cypri; rectis oculis.

10. (*a*) Parse, giving their principal parts—digesta, ades, noras, revertere, fassus erat, desierat, crevit, obstrictis, potae, retudimus. (*b*) Explain following idioms:—(1) Collocandum locaverunt. (2) Ego mea video quid intersit. (3) Nescio an contrahatur. (4) Operae pretium est cognoscere (5) Rudes operum juvenci. (6) Tempora nascentia rebus agendis.

GRAMMAR AND COMPOSITION.

THURSDAY, SEPTEMBER 16TH:—AFTERNOON, 2 TO 5.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. (*a*) Distinguish between the *Root* and *Stem* of a word. (*b*) Point out the stem of *ὄρνις γάλα, ἀνήρ, κόραξ, γυνή, παῖς*, respectively. (*c*) Write down the *Dative Plural* of these words.

2. Decline, in combination, in all numbers:—*μείζων ἀνήρ, τὸ μέγα σῶμα, ὀξὺ ἔγχος, σοφὴ γλῶσσα.*

3. (*a*) Write down the Comparative and Superlative of:—*γλυκύς, σαφής, δεινός, ἰσχυρός, ὀλίγος.* (*b*) Give the Greek for:—"the same man;" "the boy himself;" "we two;" "ye two;" "my father;" "your (plu.) mother;" "their brother."

4. (*a*) What are the Augments? Give the chief rules respecting them. (*b*) Write down the imperfect (1st Sing. Ind.) of:—*ὁράω, αἱρέω, ἕπομαι, ἐάω.* (*c*) Derive and define the term Aorist. When would you employ the Aorist, Perfect and Imperfect, respectively? (*d*) Enumerate the Tense-stems, and the tenses formed from each. How do you find the stem of a verb? Point out the original stems of:—*τάσσω, τίκτω, εὑρίσκω, πίπτω.*

5. (*a*) Write down the Ablative Sing. and the Genitive Plu. of:—*mare, aedes, vis, vir, apis, calcar, faber, mus.* (*b*) Decline, in combination, in both numbers:—*opus difficile, nix alba, mos vetus, audax facinus, vana species.* (*c*) Give the vocative of *Deus, Caius, reus.*

6. Give instances of the Superlative in:—*limus* and *—rimus*, and compare *frugi, ultra, extra, citra, certe, celeriter.*

7. (*a*) Write down the principal parts of—*cupio, cumbo, tundo, cædo.* (*b*) Inflect the Pres. Subj. Pass. of *cado;* the Perf. Subj. Act. of *posco*, and the Imp. Subj. of *morior.*

8. Translate into Latin:—(1) I ought to have read the book (use both *oportet* and *debeo).* (2) Having lost their general, the soldiers did not know where to go. (3) I have no doubt but that he will come to see me. (4) The consuls published a proclamation that no citizen should leave the city of Rome. (5) It is the duty of a good citizen to give up his life for his country. (6) I fear he will come, but I warned him not to come.

EUCLID.

FRIDAY, SEPTEMBER 17TH :—MORNING, 9 TO 12.

Examiner,..... .....ALEXANDER JOHNSON, LL.D.

1. Inscribe a circle in a given triangle.

a. Given the base, vertical angle and radius of inscribed circle of any triangle, construct the triangle.

2. The opposite angles of a quadrilateral inscribed in a circle are together equal to two right angles.

a. Any parallelogram inscribed in a circle must be a rectangle.

3. Chords are drawn in a circle, which do not pass through the centre, prove that the greatest is that nearest to the centre.

a. Through a given point within a circle, draw the shortest chord.

4. In any triangle the square on the side subtending an acute angle is less than the squares on the sides containing that angle by twice the rectangle under either of the sides, and the segment of it contained between the perpendicular let fall on it from the opposite angle, and the acute angle.

a. The sum of the squares of the sides of any triangle is equal to twice the square of the bisector of the base, and twice the square of half the base.

5. The square on the sum of any two lines is equal to the sum of their squares together with twice the rectangle under them.

6. The area of any triangle is equal to half the rectangle under the base and perpendicular.

7. The opposite sides and angles of a parallelogram are equal.

8. Construct a square equal to the difference of two given squares.

ALGEBRA—ARITHMETIC.

FRIDAY, SEPTEMBER 17TH :—AFTERNOON, 2 TO 5.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Solve the following equations :—

(*a*) $x + \sqrt{a^2 + x^2} = \dfrac{n\,a^2}{\sqrt{a^2 + x^2}}$.

(*b*) $\dfrac{5\,x + 3}{x - 1} + \dfrac{2\,x - 3}{2\,x - 2} = 9,$

(*c*) $\left.\begin{array}{l} a\,(x^2 + y^2) - b\,(x^2 - y^2) = 2a, \\ (a^2 - b^2)\,(x^2 - y^2) = 4\,ab \end{array}\right\}$

(*d*) $\sqrt[4]{a + x} + \sqrt[4]{a - x} = b.$

2. Find a number such that, whether it is divided into two or three equal parts, the continued product of the parts shall be the same.

3. A courier passing through a certain place P, travels at the rate of 5 miles in 2 hours. Four hours afterwards another passes through the same place travelling the same way at the rate of 7 miles in two hours. How far from the place P is the first overtaken by the second.

4. Insert three geometric means between $\frac{1}{9}$ and 9.

5. Sum the series $\frac{5}{7} + \frac{3}{5} +$, etc., to 101 terms.

6. Divide $a^6 + \frac{1}{a^3} + a^4 + \frac{1}{a^4} + a^2 + \frac{1}{a^2} + 2$ by $a^3 + \frac{1}{a^3} + a + \frac{1}{a}$.

7. Reduce to its lowest terms:

$$\frac{x^2 + (a+c)x + ac}{x^2 + (b+c)x + bc}$$

8. Find the least common multiple of $4(1-x)^2$, $8(1-x)$, $8(1+x)$, and $4(1+x^2)$.

9. Find a fourth proportional to .01 , 3.506 , $1\frac{7}{8}$.

10. Find the interest on £345 7s. 6d. for 5 months at $6\frac{1}{2}$ per cent. per annum.

11. The side of a square is 2.06 feet long, find the length of the diagonal.

12. Standard gold contains 11 parts of pure gold to one part of alloy, and 20 lbs. Troy are coined into 934 sovereigns and a half-sovereign; find the weight of pure gold in a sovereign.

13. The circumference of a circle is equal to the diameter multiplied by 3.1416; find the number of revolutions of a wheel 6 feet in diameter in travelling 1 mile.

14. A working alone can do a piece of work in 3 days; B in 4 days; C in 5 days. In what time will they do it, if they work together?

ENGLISH.

MONDAY, SEPTEMBER 20TH:—MORNING, 9 TO 12.30

Examiner,.....CHARLES E. MOYSE, B.A.

1. Classify, as elaborately as you can, the letters of the English alphabet, and explain the terms used in your classification.

2. Comment on the italicized parts of the following verbs.—*wo*man, heal*th*, cou*l*d, num*b*er, *a*long, bride-*groom*, *s*plash, like*ly*, fa*th*er, spin*ster* now-a-day*s*.

3. Mention three nouns, each having two plurals; three nouns of which the plural differs in meaning from the singular; three nouns used in the plural only; three nouns which have no plural.

4. Decline I, Thou, He, in all genders and both numbers. Tell what you know concerning the history of the various forms.

5. What is a phrase? a clause? How many kinds of clauses are there? Give examples.

6. Now, *therefore*, go again *for* the last time, *for* thy tarrying hath put me in sore peril of my life, and I fear my wound hath taken cold; and if thou *do* it not this time, by my faith I will arise and *slay* thee with my hands

(*a*) Parse the words in italics.

(*b*) Point out compound words.

(*c*) "With my hands." Mention the various meanings of *with*.

7. Analyze the extract quoted in question 6.

8. Correct or justify; Neither he nor I is in the wrong; I or he is in the wrong.

SECOND YEAR EXHIBITIONS.

GREEK.

THURSDAY, SEPTEMBER 16TH:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate:—Homer, Odyssey, Bk. XII:—

(A) Σειρῆνας μὲν πρῶτον ἀφίξεαι, αἳ ῥά τε πάντας
ἀνθρώπους θέλγουσιν, ὅ τις σφέας εἰσαφίκηται.
ὅστις ἀϊδρείῃ καὶ πελάσῃ καὶ φθόγγον ἀκούσῃ
Σειρήνων, τῷ δ' οὔτι γυνὴ καὶ νήπια τέκνα
οἰκαδε νοστήσαντι παρίσταται οὐδὲ γάνυνται,
ἀλλά τε Σειρῆνες λιγυρῇ θέλγουσιν ἀοιδῇ,
ἥμεναι ἐν λειμῶνι· πολὺς δ' ἀμφ' ὀστεόφιν θὶς
ἀνδρῶν πυθομένων, περὶ δὲ ῥινοὶ μινύθουσιν.

ἀλλὰ παρὲξ ἐλάαν, ἐπὶ δ' οὖατ' ἀλεῖψαι ἑταίρων
κηρὸν δεψήσας μελιηδέα, μή τις ἀκούσῃ
τῶν ἄλλων· ἀτὰρ αὐτὸς ἀκουέμεν αἴ κ' ἐθέλῃσθα,
δησάντων σ' ἐν νηὶ θοῇ χείράς τε πόδας τε
ὀρθὸν ἐν ἱστοπέδῃ, ἐκ δ' αὐτοῦ πείρατ' ἀνήφθω,
ὄφρα κε τερπόμενος ὀπ' ἀκούῃς Σειρήνοιιν.
εἰ δὲ λίσσηαι ἑτάρους λῦσαί τε κελεύῃς,
οἱ δὲ σ' ἔτι πλεόνεσσι τότ' ἐν δεσμοῖσι διδέντων.

(B) Ὣς ἐφάμην, οἱ δ' ὦκα ἐμοῖς ἐπέεσσι πιθοντο.
Σκύλλην δ' οὐκέτ' ἐμυθεύμην, ἄπρηκτον ἀνίην,
μή πώς μοι δείσαντες ἀπολλήξειαν ἑταῖροι
εἰρεσίης, ἐντὸς δὲ πυκάζοιεν σφέας αὐτούς.
καὶ τότε δὴ Κίρκης μὲν ἐφημοσύνης ἀλεγεινῆς
λανθανόμην, ἐπεὶ οὔτι μ' ἀνώγει θωρήσσεσθαι·
αὐτὰρ ἐγὼ καταδὺς κλυτὰ τεύχεα καὶ δύο δοῦρε
μάκρ' ἐν χερσὶν ἑλὼν εἰς ἴκρια νηὸς ἐβαινον
πρῴρης· ἔνθεν γάρ μιν ἐδέγμην πρῶτα φανεῖσθαι
Σκύλλην πετραίην, ἣ μοι φέρε πῆμ' ἑτάροισιν.
οὐδέ πη ἀθρῆσαι δυνάμην· ἔκαμον δέ μοί ὄσσε
πάντῃ παπταίνοντι πρὸς ἠεροειδέα πέτρην.

2. Explain the use of the Moods and Tenses of the following verbs in extt. (A) and (B):—*ἐλάαν, ἀκούσῃ, ἐθέλῃσθα, δησάντων, ἀπολλήξειαν, ἔβαινον, φανεῖσθαι, εἰσαφίκηται.* (*b*) Show the construction of:—*τῶν ἄλλων, χείράς τε πόδας, εἰρεσίης, ἐφημοσύνης, μοι παπταίνοντι.* (*c*) Distinguish between the following usages with the verb *ἀκούω*:—*μηκυθμοῦ τ' ἤκουσα βοῶν οἰῶν τε βληχήν.*

3. Parse the following verbs, and give the equivalents in Attic of such as are Epic:—*προσφύς, τετευχώς, βέβλητο, πλῆτο, ἀποτέθνασαν, νείκεον, τῖσαι, ἔκταμεν, ἀῃ, οἰσέμεναι, εἶσε, προσέλεκτο.*

4. Give as carefully as you can the *derivation* and the *meaning* of the following words:—*ἠριγενείης, χοροί, ῥηγμῖνι, σχέτλιοι, ἄσπετα, Σειρῆνας, Πλαγκτάς, Σκύλλη, πυκνοί, χθαμαλώτερον.*

5. Translate:—Xenophon, Hellenics, Bk. II.:—

(C) Τῷ μὲν οὖν πρώτῳ χρόνῳ ὁ Κριτίας τῷ Θηραμένει ὁμογνώμων τε καὶ φίλος ἦν· ἐπεὶ δὲ αὐτὸς μὲν προπετὴς ἦν ἐπὶ τὸ πολλοὺς ἀποκτείνειν, ἅτε καὶ φυγὼν ὑπὸ τοῦ δήμου, ὁ δὲ Θηραμένης ἀντέκοπτε, λέγων ὅτι οὐκ εἰκὸς εἴη θανατοῦν, εἴ τις ἐτιμᾶτο ὑπὸ τοῦ δήμου, τοὺς δὲ καλοὺς κἀγαθοὺς μηδὲν κακὸν εἰργάζετο, ἐπεὶ καὶ ἐγώ, ἔφη, καὶ σὺ πολλὰ δὴ τοῦ ἀρέσκειν ἕνεκα τῇ πόλει καὶ εἴπομεν καὶ ἐπράξαμεν· ὁ δέ, ἔτι γὰρ οἰκείως ἐχρῆτο τῷ Θηραμένει, ἀντέλεγεν ὅτι οὐκ ἐγχωροίη τοῖς πλεονεκτεῖν βουλομένοις μὴ οὐκ ἐκποδὼν ποιεῖσθαι τοὺς

ἱκανωτάτους διακωλύειν· εἰ δέ, ὅτι τριάκοντά ἐσμεν καὶ οὐχ εἷς, ἧττόν τι οἴει ὥσπερ τυραννίδος ταύτης τῆς ἀρχῆς χρῆναι ἐπιμελεῖσθαι, εὐήθης εἶ. ἐπεὶ δὲ ἀποθνησκόντων πολλῶν καὶ ἀδίκως πολλοὶ δῆλοι ἦσαν συνιστάμενοί τε καὶ θαυμάζοντες τί ἔσοιτο ἡ πολιτεία, πάλιν ἔλεγεν ὁ Θηραμένης ὅτι εἰ μή τις κοινωνοὺς λήψοιτο τῶν πραγμάτων, ἀδύνατον ἔσοιτο τὴν ὀλιγαρχίαν διαμένειν. ἐκ τούτου μέντοι Κριτίας καὶ οἱ ἄλλοι τριάκοντα, ἤδη φοβούμενοι καὶ οὐχ ἥκιστα τὸν Θηραμένη, μὴ συρρυείησαν πρὸς αὐτὸν οἱ πολῖται, καταλέγουσι τρισχιλίους τοὺς μεθέξοντας δὴ τῶν πραγμάτων.

6. (*a*) ἅτε φυγῶν ὑπὸ τοῦ δήμου:—give the exact import of ἅτε, and show how it differs from ὡς. (*b*) Explain the meaning of the following phrases:—(1) ἀπὸ συκοφαντίας ζῶντας. (2) τοὺς καλοὺς καὶ ἀγαθούς. (3) ὑπῆγον θανάτου. (4) ὥσπερ τυραννίδος. (5) τῶν μετοίκων. (6) ἡ Πάραλος. (7) τὸν Ἐνυάλιον. (8) κατὰ πόδας πλέοντες.

7. Give a short summary, with dates, of the events narrated in this book by Xenophon.

8. Translate:—Herodotus, Bk. VI.:—

Καὶ πρῶτα μὲν, ἐόντες ἔτι ἐν τῷ ἀστεϊ, οἱ στρατηγοὶ ἀποπέμπουσι Σπάρτην κήρυκα Φειδιππίδην, Ἀθηναῖον μὲν ἄνδρα ἄλλως δὲ ἡμεροδρόμον τε καὶ τοῦτο μελετῶντα· τῷ δὴ, ὡς αὐτός τε ἔλεγε Φειδιππίδης καὶ Ἀθηναίοισι ἀπήγγελλε, περὶ τὸ Παρθένιον οὖρος τὸ ὑπὲρ Τεγέης ὁ Πὰν περιπίπτει· βώσαντα δὲ τὸ οὔνομα τοῦ Φειδιππίδεω τὸν Πᾶνα, Ἀθηναίοισι κελεῦσαι ἀπαγγεῖλαι διότι ἑωυτοῦ οὐδεμίαν ἐπεμέλειαν ποιεῦνται ἐόντος εὔνου Ἀθηναίοισι, καο πλλαχῇ γενομένου ἤδη σφίσι χρησίμου, τὰ δ' ἔτι καὶ ἐσομένου. καὶ ταῦτα μὲν Ἀθηναῖοι καταστάντων σφίσι εὖ ἤδη τῶν πρηγμάτων πιστεύσαντες εἶναι ἀληθέα, ἱδρύσαντο ὑπὸ τῇ ἀκροπόλι Πανὸς ἱρὸν καὶ αὐτὸν ἀπὸ ταύτης τῆς ἀγγελίης θυσίῃσι ἐπετείῃσι καὶ λαμπάδι ἱλάσκονται. Τότε δέ πεμφθεὶς ὑπὸ τῶν στρατηγῶν ὁ Φειδιππίδης οὗτος, ὅτε πέρ οἱ ἔφη καὶ τὸν Πᾶνα φανῆναι, δευτεραῖος ἐκ τοῦ Ἀθηναίων ἄστεος ἦν ἐν Σπάρτῃ. ἀπικόμενος δὲ ἐπὶ τοὺς ἄρχοντας ἔλεγε· "Ὦ Λακεδαιμόνιοι, Ἀθηναῖοι ὑμέων δέονταί σφισι βοηθῆσαι καὶ μὴ περιιδεῖν πόλιν ἀρχαιοτάτην ἐν τοῖσι Ἕλλησι δουλοσύνῃ περιπεσοῦσαν προς ἀνδρῶν βαρβάρων· καὶ γὰρ νῦν Ἐρέτριά τε ἠνδραπόδισται, καὶ πολι λογίμῃ ἡ Ἑλλὰς γέγονε ἀσθενεστέρη."

9. (*a*) What additions were made in later times to the story of Phidippides as given above? (*b*) ἰσταμένου τοῦ μηνὸς εἰνάτῃ:—What day of the month according to our method of reckoning? (*c*) How did the Athenians classify and divide their months?

10. Name the dialects used by Herodotus and Xenophon, respectively, and point out words in ext. (D) peculiar to that of Herodotus.

LATIN.

THURSDAY, SEPTEMBER 16TH:—AFTERNOON, 2 TO 5.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate, Virgil, Æneid, VI.:—

(A)

Quattuor hic primum nigrantis *terga* iuvencos
Constituit frontique invergit vina sacerdos,
Et summas carpens media inter cornua saetas
Ignibus inponit *sacris* libamina prima,
Voce vocans Hecaten, *Caeloque Ereboque* potentem.
Supponunt alii cultros, tepidumque cruorem
Succipiunt pateris. Ipse *atri velleris* agnam
Aeneas matri Eumenidum magnaeque sorori
Ense ferit, sterilemque tibi, Proserpina, vaccam.
Tum Stygio regi nocturnas inchoat aras,
Et solida inponit taurorum viscera flammis,
Pingue super oleum infundens ardentibus extis.

(B)

Sic pater Anchises, atque haec *mirantibus* addit:
Aspice, ut insignis *spoliis* Marcellus *opimis*
Ingreditur, victorque viros supereminet omnis!
Hic rem Romanam, magno turbante tumultu,
Sistet, eques sternet Poenos Gallumque rebellem,
Tertiaque arma patri suspendit capta Quirino.
Atque hic Aeneas; una namque ire videbat
Egregium forma iuvenem et fulgentibus armis,
Sed frons laeta parum, et *deiecto* lumina *voltu*:
Quis, pater, ille, virum qui sic comitatur euntem?
Filius, anne aliquis magna de stirpe nepotum?
Quis strepitus circa comitum! quantum instar in ipso!

2. Explain carefully the construction of the words in italics in the above extract.

3. (*a*) Write a short account of the life and works of Virgil. Give the proper way of spelling his name. (*b*) Explain the mythological allusions of ext. (A). (*c*) Write short notes on the historical references of ext. (B). (*d*) What were the *spolia opima?* (*e*) *Patri Quirino*:—Who?

4. Translate, Horace, Odes, Book III.:—

(C)

Crescentem sequitur cura pecuniam
Majorumque fames. Jure perhorrui
Late conspicuum tollere verticem,
Maecenas, equitum decus.
Quanto quisque sibi plura negaverit,
Ab dis plura feret: nil cupientium
Nudus castra peto et transfuga divitum
Partes linquere gestio,

Contemptae dominus splendidior reï,
Quam si quidquid arat impiger Apulus
Occultare meis dicerer horreis,
  Magnas inter opes inops.
Purae rivus aquae silvaque jugerum
Paucorum et segetis certa fides meae
Fulgentem imperio fertilis Africae
  Fallit sorte beatior.
Quamquam nec Calabrae mella ferunt apes
Nec Laestrygonia Bacchus in amphora
Languescit mihi nec pinguia Gallicis
  Crescunt vellera pascuis,
Importuna tamen pauperies abest,
Nec si plura velim tu dare deneges.
Contracto melius parva cupidine
  Vectigalia porrigam,
Quam si Mygdoniis regnum Alyattei
Campis continuem. Multa petentibus
Desunt multa: bene est cui deus obtulit
  Parca quod satis est manu.

5. (*a*) Name the metre of ext. (C), and write down the scheme of it. Scan the first stanza. (*b*) Explain the geographical references of the same ext. (*c*) Give a short account of Maecenas, and name the other most prominent contemporaries of Horace in literature and politics.

6. Translate, Livy, Book IX.:—

(D)

Postumius in ore erat: eum laudibus ad caelum ferebant, devotioni P. Decii consulis, aliis claris facinoribus aequabant. "emersisse civitatem ex obnoxia pace illius consilio et opera; ipsum se cruciatibus et hostium irae offerre, piaculaque pro populo Romano dare." arma cuncti spectant et bellum: "en unquam futurum ut congredi armatis cum Samnite liceat?" in civitate ira odioque ardente delectus prope omnium voluntariorum fuit. rescriptae ex eodem milite novae legiones, ductusque ad Caudium exercitus praegessi fetiales ubi ad portam venere, "vestem detrahi pacis sponsoribus" jubent, "manus post tergum vinciri." cum apparitor verecundia majestatis Postumium lax vinciret, "quin tu inquit adducis lorum, ut justa fiat deditio?" tum ubi in coetum Samnitium et ad tribunal ventum Pontii est, A. Cornelius Arvina fetialis ita verba fecit. "quandoque hisce homines injussu populi Romani Quiritium foedus ictum iri spoponderunt atque ob eam rem noxam nocuerunt, ob eam rem, quo populus Romanus scelere impii sit solutus, hosce homines vobis dedo." haec dicenti fetiali Postumius genu femur, quanta maxime poterat vi, percutit, et clara voce ait "se Samnitem civem esse, illum legatum; fetialem a se contra jus gentium violatum; eo justius bellum gesturos."

7. Give as carefully as you can the derivation and meaning of the following words:—Fetiales, apparitor, piacula, expiationem, Ferculas Caudinas, praetorium, vallum, paludamenta, pila, jugum, phalanx, devotio.

8. Translate, Cicero, Select Letters:—

(E)

TULLIUS ET CICERO TIRONI SUO SAL. PLUR. DIC.

Nos a te, ut scis, discessimus a. d. IIII. Non. Nov.; Leucadem venimus a. d. VIII. Id. Nov., a d. VII. Actium; ibi propter tempestatem a. d. VI. Id. morati sumus. Inde a. d. v. Id. Corcyram bellissime navigavimus. Corcyrae fuimus usque ad a. d. XVI K. Dec tempestatibus retenti. A. d. XV. K. in portum Corcyraeorum ad Cassiopen stadia CXX processimus; ibi retenti ventis sumus usque ad a d. VIIII. K. Interea, qui cupide profecti sunt, multi naufragia fecerunt. Nos eo die cenati solvimus: inde austro lenissimo, caelo sereno, nocte illa et die postero in Italiam ad Hydruntem ludibundi pervenimus, eodemque vento postridie—id erat a. d. VII. K. Dec.—hora IIII. Brundisium venimus, eodemque tempore simul nobiscum in oppidum introiit Terentia, quae te facit plurimi. A. d. v. K. Dec. servus Cn. Plancii Brundisii tandem aliquando mihi a te expectatissimas litteras reddidit, datas Idibus Nov., quae me molestia valde levarunt, utinam omnino liberassent! sed tamen Asclapo medicus plane confirmat propediem te valentem fore.

9. (*a*) Write in full the following dates, and translate them according to our mode of reckoning—a. d. IIII. Non. Nov.; a. d. XVI. K. Dec.; Idibus Nov. (*b*) Hora IIII.—What o'clock? (*c*) *Corcyrae*—What case?

10. Define the term *idiom*. Explain the following, and translate them into idiomatic English—(1) In limine primo; (2) Non inferiora secutus; (3) Major videri; (4) Dardana Paridis tela; (5) In ore erat omnium; (6) Diis cordi fuit; (7) Mendacibus non creditur; (8) Optimus quisque hoc dicit.

HISTORY AND GRAMMAR.

SEPTEMBER—AFTERNOON, 3 TO 5.

Examiner,..... REV. GEORGE CORNISH, LL.D.

(A) 1. (*a*) Name the countries on the West of Central Greece. (*b*) What were the principal cities and rivers of Northern Italy? (*c*) Derive the term *Chersonesus*. Give the geographical position of *Chersonesus* (1) *Thracica*; (2) *Taurica*; and (3) *Cimbrica*, with their modern names.

2. (*a*) Name the original tribes of the Greek people, and point out to what tribes the people of Attica and Sparta severally belonged. (*b*) State what you hold to have been the leading characteristics of these two peoples, respectively.

3. Give a short account, with dates, of the public events in which the following persons played an important part, severally:—(1) Peisistratus; (2) Mardonius; (3) Pericles; (4) Sp. Cassius; (5) Camillus; (6) Mummius.

4. At what date, and after what wars, was Rome mistress of Italy?

(B) 1. (*a*) Write in Attic Greek the equivalents of these Homeric forms:—πόδεσσιν, κούρῃσι, γαίης, εὐνῇφι, σέθεν, ἄμμες, ἔθεν, τεός. (*b*) Contract and accentuate the following verbs:—φιλέει, κάλεε, ἐκάλεε, ἐπολέμοον, τολμάειν. (*c*) Give the full forms of ζῆν, χρῆσθαι, and διψῴη.

2. Distinguish between:—βασίλεια and βασιλεία. κάλως and καλῶς. ἀγων and ἀγών. οἷος, οἵος, and οἰός τε. αὐτοῦ and αὑτοῦ. πρᾶξις and πρᾶγμα. πόλις and πόλισμα. (*b*) What are *verbals*? Show how they are formed and construed, illustrating with διώκω. (*c*) Write down (1) *3rd Sing. Ind. Pres.*; (2) the *Pres. Past.*; and (3) the *Pres. Inf.* of εἰμί, εἶμι, and ἵημι, severally.

3. (*a*) Give examples, with definitions, of verbs *frequentative*, *desiderative*, and *inceptive*, in Latin. (*b*) How is the *Fut. Inf. Pass.* expressed in Latin? Illustrate with *gero* and *jubeo*.

4. (*a*) Distinguish between:—*pendo* and *pendeo*; *veneo* and *venio*; *prodo* and *proficio*; *visere* and *vitare*; *vincere* and *vincire*; *sero-sertum* and *sero-satum*. (*b*) Illustrate by examples the use of the *Ablative Absolute*; the *Predicative Dative*; and the *Accusative of extension*.

(C) 1. Translate into Greek:—(*a*) He read the half of the book. (*b*) The State ought to be benefited by the citizens. (*c*) The general was entrusted with the command in company with three others. (*d*) If he had had anything he would himself have given it.

2. Translate into Latin:—Thus man obtained the arts of life, but the art of polity he had not; for it was kept in the house of Zeus, and into the citadel, the dwelling of Zeus, Prometheus was no longer allowed to enter; moreover, the watchmen of Zeus were terrible. But into the joint abode of Athene and Hephaistus, where they worked together at the craft they loved, he stole unnoticed, and purloining the fiery art of Hephaistus, and the other proper to Athene, bestowed them on man; and hence man derives abundance for life. But Prometheus, for his brother's fault, was visited not long after, as the story goes, by the penalty of his theft.

MATHEMATICS.

FRIDAY, SEPTEMBER 17TH :—MORNING, 9 TO 12.

Examiner,..... ..ALEXANDER JOHNSON, LL.D.

1. Equiangular parallelograms have to one another the ratio which is compounded of the ratios of their sides.

2. In any right-angled triangle, any rectilineal figure described on the side subtending the right angle is equal to the sum of the similar and similarly described figures on the sides containing the right angle.

3. If two straight lines intersect within a circle, of which one passes through the centre and the other does not, the rectangles under their segments are equal.

4. In any triangle, the difference of the squares of the sides is equal to the difference of the square of the segments of the base made by the perpendicular let fall on it from the vertical angle.

5. Assuming $sin\ 18° = \frac{\sqrt{5}-1}{4}$

Prove $cos\ 36° = \frac{\sqrt{5}+1}{4}$

6. Prove $tan\ A + cot\ A = \frac{2}{sin\ 2A}$

7. Prove $sin\ 75° = \frac{\sqrt{3}+1}{2\sqrt{2}}$

8. Find the circular measure of a right angle.

9. Find the value of

$$\frac{2a\sqrt{1+x^2}}{x+\sqrt{1+x^2}} \quad \text{when } x = \tfrac{1}{2}\left\{\sqrt{\frac{a}{b}} - \sqrt{\frac{b}{a}}\right\}.$$

10. Solve the equations:

$$\frac{ax-1}{\sqrt{ax}+1} = 4 + \frac{\sqrt{ax}-1}{2}\ ; \quad \left\{\begin{matrix} x+\frac{1}{2}(y+z) = 102 \\ y+\frac{1}{3}(z+x) = 78 \\ z+\frac{1}{4}(x+y) = 61 \end{matrix}\right\}.$$

11. Find the time after p o'clock at which the hour and minute hands of a watch are distant q of the minute div
other.

12. How much per cent. is $27\frac{1}{3}$ parts out of 36?

13. Divide $2\frac{1}{2} + \frac{1}{6}$ by $3\frac{1}{2} - \frac{1}{8}$, and express the result as a decimal.

MATHEMATICS.

FRIDAY, SEPTEMBER 17TH:—AFTERNOON, 2 TO 5.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. If any tangent be drawn to a given circle, and its pole taken with respect to any origin, the distance of the pole from the origin is to its distance from the polar of the centre as the distance of the centre from the origin is to the radius of the given circle.

2. Given a circle and the lengths of the three diagonals of a quadrilateral inscribed in it; construct the quadrilateral.

3. Describe a circle touching three given circles.

4. If any hexagon be inscribed in a circle, the intersections of the three pairs of opposite sides lie on the same straight line.

5. If a variable tangent meet two fixed tangents, the intercept on it subtends a constant angle at the centre of the circle.

6. Inscribe in any triangle a parallelogram of given species.

7. If two triangles be on equal bases and between the same parallels, the two sides of each triangle intercept equal segments on any straight line parallel to the bases.

8. Given the sum of the squares of two lines, find them when their sum is a maximum.

9. If $f(x)$ be any rational integral function of x and $f'(x)$ the first derived function; then will

$$f'(x) = \frac{f(x)}{x-a} + \frac{f(x)}{x-b} + \frac{f(x)}{x-c} + \&c.,$$

where a, b, c, are the roots real or imaginary of the equation $f(x) = 0$.

10. When all the roots of an equation $f(x) = 0$ are real, the number of positive roots is equal to the number of changes of sign in $f(x)$, and the number of negative roots is equal to the number of changes of sign in $f(-x)$.

11. The roots of the equation $x^3 + px^2 + qx + r = 0$ being a, b, c, form the equation whose roots are

$$\frac{a}{b+c}, \frac{b}{c+a}, \frac{c}{a+b}.$$

12. If a be any root of the equation $x^n 1 = 0$, then x^m is also a root, where m is any integer, positive or negative.

13. Apply Newton's method of approximation to find the root lying between 3. 2 and 3. 3 of the equation

$$x^3 - 24x + 44 = 0.$$

14. Solve by Horner's method the equation $x^3 - 17 = 0$.

15. Show that the equation $x^5 - 4x^2 + 3 = 0$ has at least two imaginary roots.

ENGLISH.

MONDAY, SEPTEMBER 20TH:—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

Candidates are requested to answer questions 1, 2, 4, 6, 7 of the First Year Exhibition paper and also the following:

1. Assign to English its place among languages. Do the sources of its vocabulary determine that place? your reasons?

2. Comment on six words, not mentioned in the previous part of the paper, which are historically interesting.

3. Classify conjunctions.

4. Explain Solecism, phonetic decay, metathesis, emphasis.

FRENCH.

WEDNESDAY, SEPTEMBER 22ND:—MORNING, 9 TO 12.

Examiner,.....P. J. DAREY, M. A., B. C. L.

L'atgle, la laie et la chatle.

L'aigle avait ses petits au haut d'un arbre creux,
La laie au pied, la chatte entre les deux;
Et sans s'incommoder, moyennant ce partage,
Mères et nourrissons faisaient (*a*) leur tripotage.
La chatte détruisit (*b*) par sa fourbe l'accord;
Elle grimpa chez l'aigle et lui dit (*c*): "Notre mort
(Au moins de nos enfants, car c'est tout un aux mères)
Ne tardera possible guères.
Voyez-vous à nos pieds fouir incessamment
Cette maudite laie et creuser une mine?
C'est pour déraciner le chêne assurément,

Et de nos nourrissons attirer la ruine :
L'arbre tombant, ils seront dévorés ;
Qu'ils s'en tiennent (*d*) pour assurés
S'il m'en restait un seul, j'adoucirais ma peine." *La Fontaine.*

2. *a*, *b*, *c*, *d*. Write in full the primitive tenses of those verbs.

3. Write the masculine of *l'aigle*, *la laie* et *la chatte* and the feminine o, *roi*, *gouverneur*, *pécheur*, *pêcheur*, *cheval*, *paysan*, *empereur*.

6. When is the word *ce* an adjective and when a pronoun? What is its plural.

7. Write the adverbs formed from the adjectives *gentil impuni*, *fou*, *long bref*.

8. Where must the adverbs be placed in French? Give examples.

9. Explain the rule concerning the word *leur*, when a personal pronoun a possessive adjective, or a possessive pronoun. Give examples.

10. Translate into French :

We are told that the Sultan Mahmoud, by his perpetual wars abroad and his tyranny at home, had filled his dominions with ruin and desolation, and half unpeopled the Persian empire. The vizier to this great sultan (whether a humorist or an enthusiast, we are not informed) pretended to have learnt of a certain dervis to understand the language of birds, so that there was not a bird that could open his mouth, but the vizier knew what it was he said. (ADDISON, *Spectator.*)

CHEMISTRY.

WEDNESDAY, SEPTEMBER 22ND :—AFTERNOON, 2 TO 5.

Examiner,.....B. J. HARRINGTON, B.A., Ph.D.

1 What are the properties of the metal Magnesium? When an aqueous solution of its Chloride is evaporated to dryness, what change takes place ?

2. Describe the production of Mercury from Cinnabar. Distinguish also between Mercurous and Mercuric Salts.

3. Name the Pentatomic metals. Give their symbols, and describe one of them.

4. What will be the effect of strongly heating each of the following substances? $CaCO_3$, MnO_2, HgS, $Sr(NO_3)_2$, BaO_2.

5. How would you distinguish (*a*) a salt of Lead from one of Silver, (*b*) a salt of Gold from one of Platinum ?

6. Point out the analogies between the metals Nickel and Cobalt. What are the best tests for the detection of these substances when in solution?

7. How do Cast Iron and Wrought Iron differ in composition? Describe the production of the latter by puddling.

8 Explain the following equations:

$$4\,AgCl + 2\,Na_2CO_3 = 4\,NaCl + 2CO_2 + O_2 + 2Ag_2$$
$$Fe_2Cl_6 + H_2O + H_2SO_3 = 2\,FeCl_2 + 2\,HCl + H_2SO_4$$

SCIENCE SCHOLARSHIPS.

BOTANY (*First Paper*).

FRIDAY, SEPTEMBER 17TH } —9 A. M. AND 2 P. M.
WEDNESDAY, SEPTEMBER 22ND: —9 A. M. }

Examiner,..... .....J. W. DAWSON, LL.D., F.R.S.

1. Describe the Fibro-vascular Tissues of an Endogenous Stem, and the manner of their arrangement.

2. Describe the Fructification and Fertilization in *Polypodineæ*.

3. Describe the modes of dehiscence of the Anther, and the action of the Pollen on the Stigma and Ovule.

4. Describe any peculiar Epidermal Appendages observed in Canadian plants.

5. Explain the differences in the Arrangement of Ovules in different Ovaries and Fruits.

6. State what is known as to the Thickening of the Walls of Cells and Fibres.

7. Explain the nature and uses of Chlorophyll.

8. What is Parasitism? Illustrate by Canadian examples.

9. Describe the Structures employed by any plant in capturing and feeding on insects.

10. Define the Leading Subdivisions of plants in the Natural System.

BOTANY (*Second Paper*).

1. Give a detailed account of any order of Canadian plants containing edible fruits, with its most important species.

2. Describe the Flower and Fruit in the genera *Pinus* and *Thuja*.

3. Describe the Canadian species of Herbaceous Cornels.

4. What Endogenous orders have netted-veined leaves. Describe one of them.

5. What are the distinctions between *Vaccineæ* and *Ericineæ*; *Polygonum* and *Rumex*; *Salix* and *Populus*.

6. By what characters would you recognize plants of the following genera -*Anemone*, *Kalmia*, *Sarracenia*, *Aralia*.

7. Characterize the order *Leguminosæ*, and describe one of its generic forms.

8. What are the principal generic forms representing the orders *Papaveraceæ*, *Caprifoliaceæ*, *Orchidaceæ* in Canada?

9. Characterize the orders *Hypericaceæ*, *Violaceæ* and *Umbelliferæ*, and name the principal generic forms of one of them.

10. What are the principal generic forms representing the orders *Cruciferæ*, *Compositæ*, *Betulaceæ*, and *Liliaceæ* in Canada.

BOTANY (*Third Paper*).

Examination and determination of species of Canadian Plants.

CHEMISTRY.

WEDNESDAY, SEPTEMBER 22ND:—AFTERNOON, 2 TO 5.

Examiner,..... B. J. HARRINGTON, B.A., Ph.D.

1. How are the densities of gases and vapour ascertained?

2. By what experiments may it be shown that different substances require different quantities of heat to raise them to the same temperature? What important relation has the specific heat of water to life upon our globe?

3. Distinguish between electro-negative and electro-positive substances giving examples of each.

4. When a piece of Phosphorus is burnt in an excess of dry air, what substance is produced? Give its formula, and state how it is acted upon by boiling water.

5. What would be the most appropriate acid to use as a solvent for each of the following metals?—Iron, Copper, Zinc, Tin, Lead, Antimony and Platinum.

6. Give the formula of common Alum, and state how it is obtained from Alum-shale. Explain the use of Alum in dyeing.

7. Name the substances indicated by the following formulæ :—Cu_2Cl_2, $CuCl_2$, K_2CrO_4, KCy, $Ca(NO_3)_2$. Why is the last not written CaN_2O_6 ?

8. Describe Nessler's test for the detection of ammonia.

LOGIC.

MONDAY, SEPTEMBER 20TH :—MORNING, 9 TO 12.

Examiner,..... ....J. CLARK MURRAY, LL.D.

1. Define singular, common, concrete, abstract, positive, negative, connotative, and relative, terms, giving an example of each class.

2. Analyse the following propositions into the three parts of which each is composed :—

(*a*) Fame is no plant that grows on mortal soil ;

(*b*) Better to reign in hell than serve in heaven.

3. Explain how A, E, I, and O, respectively, are converted, illustrating by an example of each.

4. "All knowledge is useful." State the inferences which may be drawn from this proposition to each of the following :—

(*a*) No knowledge is useful;

(*b*) Some knowledge is useful;

(*c*) Some knowledge is not useful.

5. Define *mood* and *figure*, as applied to syllogisms.

6. Distinguish the different figures.

7. (*a*) What conclusions are alone legitimate in the second and third figures respectively ? (*b*) Explain the reason in each case.

8. (*a*) Name the mood and the figure of the following syllogism, and (*b*) reduce it to the first figure : —"Some intelligent men are not good companions ; for some immoral men are intelligent, and no immoral men are good companions."

9. Discuss the legitimacy of each of the following arguments :—

(*a*) If the doctrine of immortality is universally believed, it must be true ; but it is not universally believed, and therefore cannot be true.

(*b*) If the extinct animal that left this foot-print was a beast of prey, it could not have had cloven hoofs ; but it had not cloven hoofs, and therefore was a beast of prey.

10. Define (*a*) enthymeme, (*b*) prosyllogism, (*c*) episyllogism, (*d*) sorites.

11. Distinguish (*a*) the two general divisions of the fallacies, (*b*) the two main subdivisions of each.

12. Explain the nature of each of the following fallacies:—

(*a*) What we eat grew in the fields; loaves of bread are what we eat, and therefore they grew in the fields.

(*b*) The stonemasons are benefited by the masons' union; the bricklayers by their union; the shoemakers and the tailors by theirs: in short, every trade by its own union. Therefore if all workmen had unions, they would all be benefited thereby.

CLASSICAL AND MODERN LANGUAGE SCHOLARSHIPS.

GREEK.

THURSDAY, SEPTEMBER 16TH:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate:—(A) Demosthenes, Olynthiacs, III. § 34:—*καὶ ταῦτ οὐχ ἵν ἀπέχθωμαι * * * ἐξεστι γενέσθαι.*

2. (*a*) Explain the formation, and give the meaning of:—*πανδημεί, τηνάλλως, τοιαυτί, κομιδῇ, ἐπιεικῶς, ὦ τᾶν,* (*b*) *οὐ μὴν ἀλλά, εἰς μακράν*:—supply the ellipses in these phrases, severally. (*c*) Point out the metaphors in:—*τιθασεύσουσι, χειροήθεις, ἐκνενευρισμένοι, προπέποται, συγκεκροτημένοι, φωρᾶται, καταρρεῖ, ἀνεχαίτισε.* (*d*) Explain the use of the Aorist in such expp. as:—*ἅπαντα ἀνεχαίτισε καὶ διέλυσεν.*

3. Translate:—(B) Thucydides, Bk. VI., chap. lxxv.

4. Translate carefully the following ext.:—(*a*) cap. 1.—*τοσαύτη οὖσα * * * διέργεται τὸ μὴ ἤπειρος οὖσα*:—explain the use of *μή* in such phrases. (*b*) cap. 2.—*πρῶτοι φαίνονται ἐνοικσάμενοι*:—distinguish between *φαίνομαι* with the Infinitive, and the Participle as here. (*c*) cap. 6.—*ὧν ἀκούοντες οἱ Ἀθηναῖοι * * * πολλάκις λεγόντων*:—account for the use of two genitives with *ἀκούω*. (*d*) cap. 33.—*ὡς οὖν παρεσομένων*: give the force of *ὡς*. (*e*) cap. 59 —*ὡς βασιλέα*:—explain this use of *ὡς*, and also of *βασιλέα* without the Article. (*f*) cap. 72.—*ἑαυτῆς θαρσαλεωτέραν*:—explain the construction.

5. Translate:—(C) Herodotus, Bk. VII., chap. cxxxvi.

6. (*a*) Define the geographical positions of the places and peoples mentioned in chap. I. of this book. (*b*) Explain the meaning of the following terms :—*ἡγεμονίην, τάλαντα ἀργυρίου τρία, δείλην ὀψίην, Ἀρήϊον πάγον, ἰακχάζουσι, μυεῖται, πρόξενος.*

7. Translate :—(D) Xenophon, Hellenics, Bk. I., chap. v., § 16–20, inclusive.

8. (*a*) *χαλεπῶς εἶχον τῷ* Α. :—explain this usage. (*b*) *εἰς τὰ ἑαυτοῦ τείχη* :—where was this, and what name does Cor. Nepos give it ? (*c*) *ἔλαβεν αὐτοῖς ἀνδράσι* :—supply the ellipse, and explain this use of the Dative.

9. (*a*) Give an account of what subsequently befell the ten generals mentioned in ext. (D). (*b*) For what reason did the Athenians probably liberate Dorieus ?

10. Translate :—(E) Euripides, Medea, vss. 937–959.

11. (*d*) *οὐκ οἶδ' ἂν εἰ πείσαιμι* :—turn this into Latin, and explain the force of the expression. (*b*) Explain the use of the Genitive in the following instances, severally :—*αἰτεῖσθαι πατρός. συλλήψομαί τοῦδε πόνου. τῶν νῦν ἀνθρώποισι. τῶνδε σὰς κενοῖς χέρας. πέπλων. λόγου τινός. χρημάτων. ψυχῆς οὐ χρυσοῦ μόνον.* (*c*) *μή μοι σύ* (vs. 960) :—explain the Dative, and supply the ellipse.

LATIN.

FRIDAY, SEPTEMBER 17TH :—MORNING, 9 TO 12.

Examiner,..... .....REV. GEORGE CORNISH, LL.D.

1. Translate :—(A) Tacitus, Annals, Book I, chap. lix.

2. (*a*) Translate carefully the following extt., and explain their grammatical construction :—(1) Sed quo pluribus munimentis insisteret (2) Quamquam Tiberio nulla vetus in Arruntium ira, sed divitem, promptum, artibus egregiis et pari fama publice, suspectabat. (3) Procax lingua et miscere Coetus histrionali studio doctus. (4) Non florentis Caesaris, neque suis in castris, facies. (*b*) What features of the language are illustrated, severally, by such expressions as :—"Provecta jam senectus aegro et corpore fatigabatur ;" "Fama dediti Segestis vulgata ;"—Which predominates in Latin? (*c*) "Incendebat haec fletu :"—What figure is here employed ?

3. Write short explanatory notes, giving dates, on the following historical references :—(1) Posito triumviro nomine. (2) Principes juventutis (3) Practoriarum cohortium praefectus. (4) Idem dies accepti imperii princeps et vitae supremus. (5) Varianas clades.

4. Translate :—(B) Pliny, Select Letters :—

Regulus qui speraret aliquid ex novis tabulis, quia nuper captare eum coeperat, medicos hortari, rogare quoquo modo spiritum homini prorogarent. Postquam signatum est testamentum, mutat personam, vertit adlocutionem, isdemque medicis "quousque miserum cruciatis? quid invidetis bona morte cui dare vitam non potestis?" Moritur Blaesus, et tamquam omnia audisset, Regulo ne tantulum quidem. Sufficiunt duae fabulae, an scholastica lege tertiam poscis? Est unde fiat. Aurelia ornata femina, signatura testamentum sumpserat pulcherrimas tunicas Regulus cum venisset ad signandum, "rogo" inquit "has mihi leges." Aurelia ludere hominem putabat, ille serio instabat: ne multa, coëgit mulierem aperire tabulas ac sibi tunicas quas erat induta legare: observavit scribentem, inspexit an scripsisset. Et Aurelia quidem vivit, ille tamen istud tamquam morituram coëgit, et hic hereditates, hic legata, quasi mereatur, accipit. Ἀλλὰ τί διατείνομαι in ea civitate, in qua iam pridem non minora praemia, immo maiora, nequitia et improbitas quam pudor et virtus habent? Aspice Regulum, qui ex paupere et tenui ad tantas opes per flagitia processit, ut ipse mihi dixerit, cum consuleret, quam cito sestertium sescenties impleturus esset, invenisse se exta duplicia, quibus portendi milies et ducenties habiturum. Et habebit, si modo, ut coepit, aliena testamenta, quod est improbissimum genus falsi, ipsis quorum sunt illa dictaverit. Vale.

5. (*a*) Give the meaning and derivation of the following words from this letter :—climacterium, assem, fabulam, digitos, codicillos, personam, tabulas, legata, exta, sestertium. (*b*) Distinguish between *sestertius* and *sestertium*, and explain the use of the numerals in reckoning by sesterces. (*c*) Explain the meaning of—Assem para; auream fabulam; agitat digitos; ornata femina; scholastica lege.

6. Translate :—(C) Horace, (*a*) Satires, Book I.; Sat. i., vss. 61-79. (*b*) Epistles, Book I.; Ep. xvi., vss. 46-62.

7. (*a*) Explain the following forms in extt. (*a*) and (*b*), and explain their grammatical construction :—(1) Facias *illi*. (2) Ipse *domi*. (3) *Queis*. (4) *Optarim*. (5) *Frugi*. (6) *Fabae*. (*b*) *Sabellus* :—What is the reference? (*c*) *Laverna* :—Explain the reference, and give the derivation of the name.

8. Translate :—(D) Terence, Adelphi, Act iv., Sc. 7, vss. 28-44.

9. (*a*) Which is the correct form, Aedepol or Edepol? Also explain the forms :—satur, sis, dis, quor, equidem, prorsus. (*b*) Construe and explain the following formulæ :—(1) Ut te magnus perdat Juppiter. (2) Pro divom fidem. (3) Ita me di ament ut video tuam ineptiam. (4) O Juppiter, hancine vitam.

10. Translate :—(E) Virgil, Georgics, Book I., vss. 257-275.

11. (*a*) Enumerate the minor works ascribed to Virgil. (*b*) Give the date of the composition of the Georgics. At whose instigation did Virgil write them? On what grounds have they been held to surpass his other poems in originality and artistic effect?

GREEK AND LATIN PROSE COMPOSITION.

THURSDAY, SEPTEMBER 16TH:—AFTERNOON, 2 TO 5.

Examiner,.....REV. GEORGE CORNISH, LL.D.

(A.) Translate into Greek:—

1. If you had done this you would have done wrong.

2. When I have the gold, I will give to you.

3. The good and wise citizens ought to benefit the state and punish all who do wrong to it.

4. They continued fighting for a long time, but at last both armies withdrew from the field.

5. He was accused and convicted of being a traitor and condemned to death, but he secretly escaped from the city.

(B) Translate into Latin:—

Then Criton, hearing this, gave a sign to the boy that stood near him; and the boy departing, and having stayed for some time, came back with the person that was to administer the poison, who brought it pounded in a cup. And Socrates, looking at the man, said, "Well, my friend, as you are knowing in these matters, what is to be done?" "Nothing," he said, "but after you have drunk it to walk about, until a heaviness comes on in your legs, and then to lie down; this is the manner in which you have to act." And at the same time he extended the cup to Socrates. And Socrates taking it—and, indeed, with great cheerfulness, neither trembling nor turning colour, but as his manner was, looking sternly under his brows at the man—"What say you," he said, "to making a libation from this? may I do it or not?"

ANCIENT HISTORY.

FRIDAY, SEPTEMBER 17TH:—AFTERNOON, 2 TO 5.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Give the dates in Jewish history of (*a*) the Exodus; (*b*) the reign of Saul; (*c*) the Revolt of the Ten Tribes; and (*d*) the Babylonian Captivity. Name the most prominent kings of Judah.

2. Enumerate the nations that successively in ancient times held the supremacy, previous to the time of Cyrus the Elder.

3. Give the geographical position of ancient Media, Armenia, Parthia, Syria, Chersonesus (1) Taurica, (2) Thracica, and (3) Cimbrica, with modern names where you can.

4. Trace the leading events in the formation of the Empire, which in the reign of Darius, son of Hystaspes, threatened the independence of Greece.

5. Give the geographical limits and divisions, (1) of Greece Proper; (2) of Greek Colonization.

6. Give an account of the expedition of the Ten Thousand. What were the important events that arose out of it?

7. (*a*) Trace briefly the growth of the leading Grecian States, naming those that in succession held the hegemony of Greece. (*b*) What events and causes led to the establishment and overthrow of the supremacy of Athens?

8. Trace the most important political events and constitutional changes at Rome, with dates, from the period of the expulsion of the Kings down to the Punic wars.

9. Give an account of the constitutional changes effected by the reforms of C. Gracchus, and point out what was their general object.

10. What was the real grounds and the alleged pretexts, on the part of Rome and Carthage, severally, for beginning the Second Punic War?

ENGLISH.

[Spalding, *English Literature*; Shakespeare, *Julius Cæsar*.]

MONDAY, SEPTEMBER 20TH:—MORNING, 9 TO 12.30.

Examiner,..... .....CHAS. E. MOYSE, B.A.

1. Sketch the literary career of Francis Bacon and of John Milton, giving Spalding's chief criticisms as you proceed.

2. Name the leading theological writers of the period 1558–1660, and reproduce Spalding's account of any one of them.

3. Write the substance of Spalding's prefatory remarks on the literature of the Eighteenth Century.

4. "*It has gravely been asked whether Pope was a poet.*" What does Spalding say about this?

5. How does Spalding classify the poets of the present century? Criticise him.

6. Name the writers of Jane Eyre, Vivian Grey, Hypatia, Modern Painters.

7. Tell, in Shakespeare's language when you can,

(*a*) Casca's Story of Cæsar's refusal of the Crown.

(*b*) The visit of the Conspirators to Brutus.

(*c*) The quarrel between Brutus and Cassius.

8. In what connection does each of these lines occur, and by whom is it spoken?

(*a*) This was the noblest Roman of them all.

(*b*) Sign'd in thy spoil and crimsoned in thy lethe.

(*c*) This was the most unkindest cut of all.

(*d*) If I could pray to move, prayer would move me.

(*e*) Lowliness is young ambition's ladder,
Whereto the climber upward turns his face.

9. Comment on the following words and constructions:—You ought not walk; proper; deck'd with ceremonies; Lupercal; eye did lose his lustre; at mouth; he plucked me ope; why old men fools, and children calculate; the Ides of March; if thou path; in suppressive mettle; cry "Havoc;" you were best; with fearful bravery; die more hon urable.

10. What features of Shakespeare's play have impressed you most deeply?

ENGLISH.

[Trench, *Study of Words*; Trench, *English, Past and Present.*]

MONDAY, SEPTEMBER 20TH:—AFTERNOON, 2 TO 4.30.

Examiner,.....CHAS. E. MOYSE, B.A

1. How does Trench show that poetry is embodied in the names of places and of flowers?

2. Comment on miscreant, dunce, mammetry, spaniel, Picts, alligator hurricane, roué, mob, alms.

3. When is the need of new words felt, and of what classes of word-makers does Trench speak?

4. Instance "etymologies at random."

5. Give a brief synopsis of the matter in the lecture on the "Diminutions of the English language."

6. What is noteworthy concerning *rhythm, abhominable, frontispiece.*

7. Mention words which have suffered a comparatively recent change in pronunciation.

FRENCH.

WEDNESDAY, SEPTEMBER 22ND :—MORNING, 9 TO 12.

Examiner,.....P. J. DAREY, M.A., B.C.L.

1. Traduisez en français :

SIMPLICITY.

It is far more difficult to be simple than to be complicated; far more difficult to sacrifice skill and cease exertion in the proper place, than to expend both indiscriminately. We shall find, in the course of our investigation, that beauty and difficulty go together; and that they are only mean and paltry difficulties which it is wrong or contemptible to wrestle with. Be it remembered then—Power is never wasted. Whatever power has been employed, produces excellence in proportion to its own dignity and exertion; and the faculty of perceiving this exertion, and appreciating this dignity, is the faculty of perceiving excellence.

RUSKIN.

2. Traduisez en anglais :

Mon Dieu! que (*a*) votre esprit est d'un étage bas!
Que vous jouez au monde un petit personnage,
De vous claquemurer aux choses du ménage,
Et de n'entrevoir point de (*b*) plaisirs plus touchants
Qu'une idole d'époux et des marmots d'enfants!
Laissez aux gens grossiers (*c*) aux personnes vulgaires,
Les bas amusements de ces sortes d'affaires.
A de plus hauts objets élevez vos désirs,
Songez à prendre un goût des plus nobles plaisirs,
A l'esprit (*d*), comme nous donnez-vous toute entière.
Vous avez notre mère en exemple à vos yeux
Que du nom de savante on honore en tous lieux :
Tâchez, ainsi que moi, de vous montrer sa fille ;
Aspirez aux clartés qui sont dans la famille
Et vous rendez sensible aux charmantes douceurs
Que l'amour de l'étude épanche dans les cœurs.

MOLIÈRE, *les Femmes savantes A.* 1, sc. 1.

3 *a*. A quelle partie du discours ce *que* appartient-il ? A quelles parties le mot *que* appartient-il encore ? Citez des exemples.

b. Pourquoi pas *des* plaisirs ? Donnez la règle.

c. Pourquoi pas grossières ? Donnez la règle.

d. Donnez les différentes significations du mot *esprit ?* Qu'est-ce qu'il y a de sous-entendu avant esprit ?

4. Traduisez en français le morceau suivant et expliquez comment il faut écrire les participes passés qui s'y trouvent :

My cousins have sent me some fruit (*pl*) which I found delicious; I thanked them for them in the letter which I addressed them. As for the apples which I received from my nephews, I have not found them so good as those they gave me last year; yet the same trees have produced them.

5. Quand Descartes, Joinville, Marot, Fénelon, Voltaire, Rabelais, Buffon, Christine de Pison, La Fontaine, Pascal, vécurent-ils? Quels ouvrages ces auteurs ont-ils écrits?

SESSIONAL EXAMINATIONS, 1881.

ORDINARY CLASSICS.

FIRST YEAR.

GREEK.—HOMER.—ODYSSEY, BOOK XI.

FRIDAY, APRIL 1ST:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate:—

(A) Τὴν δὲ μέτ' Ἰφιμέδειαν, Ἀλωῆος παράκοιτιν,
εἰσιδον, ἣ δὴ φάσκε Ποσειδάωνι μιγῆναι,
καί ῥ' ἔτεκεν δύο παῖδε, μινυνθαδίω δὲ γενέσθην,
Ὦτόν τ' ἀντίθεον τηλεκλειτον τ' Ἐφιάλτην,
οὓς δὴ μηκίστους θρέψε ζείδωρος ἄρουρα
καὶ πολὺ καλλίστους μετά γε κλυτὸν Ὠρίωνα·
ἐννέωροι γὰρ τοίγε καὶ ἐννεαπήχεες ἦσαν
εὖρος, ἀτὰρ μῆκός γε γενέσθην ἐννεόργυιοι.
οἳ ῥα καὶ ἀθανάτοισιν ἀπειλήτην ἐν Ὀλύμπῳ
φυλόπιδα στήσειν πολυάϊκος πολέμοιο.
Ὄσσαν ἐπ' Οὐλύμπῳ μέμασαν θέμεν, αὐτὰρ ἐπ' Ὄσσῃ
Πήλιον εἰνοσίφυλλον, ἵν' οὐρανὸς ἀμβατὸς εἴη.
καί νύ κεν ἐξετέλεσσαν, εἰ ἥβης μέτρον ἵκοντο·
ἀλλ' ὄλεσεν Διὸς υἱὸς, ὃν ἠύκομος τέκε Λητὼ,
ἀμφοτέρω, πρίν σφωϊν ὑπὸ κροτάφοισιν ἰούλους
ἀνθῆσαι πυκάσαι τε γένυς εὐανθέϊ λάχνῃ.

(B) „Αἶαν, παῖ Τελαμῶνος ἀμύμονος, οὐκ ἄρ' ἔμελλες
οὐδὲ θανὼν λήσεσθαι ἐμοὶ χόλου εἵνεκα τευχέων
οὐλομένων; τὰ δὲ πῆμα θεοὶ θέσαν Ἀργείοισιν,
τοῖος γάρ σφιν πύργος ἀπώλεο· σεῖο δ' Ἀχαιοὶ
ἶσον Ἀχιλλῆος κεφαλῇ Πηληιάδαο
ἀχνύμεθα φθιμένοιο διαμπερές· οὐδέ τις ἄλλος
αἴτιος, ἀλλὰ Ζεὺς Δαναῶν στρατὸν αἰχμητάων
ἐκπάγλως ἤχθηρε, τεὶν δ' ἐπὶ μοῖραν ἔθηκεν.
ἀλλ' ἄγε δεῦρο, ἄναξ, ἵν' ἔπος καὶ μῦθον ἀκούσῃς
ἡμέτερον· δάμασον δὲ μένος καὶ ἀγήνορα θυμόν."
Ὣς ἐφάμην, ὁ δέ μ' οὐδὲν ἀμείβετο, βῆ δὲ μετ' ἄλλας

ψυχὰς εἰς Ἐρεβος νεκύων κατατεθνηώτων.
ἐνθα χ' ὁμῶς προσέφη κεχολωμένος, ἤ κεν ἐγὼ τόν·
ἀλλά μοι ἤθελε θυμὸς ἐνὶ στήθεσσι φίλοισιν
τῶν ἄλλων ψυχὰς ἰδέειν κατατεθνηώτων.

2. (*a*) Construe carefully the last two vss. of ext. (A). (*b*) Explain the use of the Imperfect *ἐμελλες* in vs. 1 of ext. (B). (*c*) In the same ext., show the construction of *ἐμοί*, *σφίν' σεῖο φθιμένοιο*, *κεφαλῇ*, (*d*) *τείν*:—explain the form and name the dialect. (*e*) *χ'*:—for what does this stand, and how is it formed ?

3. (*a*) Point out Epic forms that occur in the above extt., and give their equivalents in the Attic dialect. (*b*) Write down the name and scheme of the metre employed, and scan the first four vss. of ext. (B). (*c*) Define the terms *Hiatus*, *Arsis*, *Thesis*, *Aphaeresis*, *Elision*.

4. Explain carefully the use of the oblique cases in the following extt.:—(*a*) *Γοργείην κεφαλὴν δεινοῖο πελώρου.* (*b*) *Πηλῆος ἀμύμονος οὔ τι πέπυσμαι.* (*c*) *υἷος ἐνεπλησθῆναι.* (*d*) *πολέων φόνῳ ἀνδρῶν ἀντεβόλησας.* (*e*) *χρυσὸν φίλου ἀνδρὸς ἐδέξατο.* (*f*) *ἔβη εἰς Ἀίδαο.*

5. Parse the following words:—*ἄλα*, *βαίνομεν*, *ἴει*, *δύσετο*, *στείχησι*, *Ἐρέβευς*, *ἴμεν*, *πυθέσθαι*, *ἐφθης*, *ἄσε*, *ἐάγη*, *ἔπτατο*, *πιτνάς*, *δῶ*.

6. Give the derivation and meaning of the following, and point out cognate forms, if any, in Latin or English:—*κρῆθεν*, *δέρτρον*, *πρόμος*, *ἀνεμώλια*, *δέμας*, *δῆμος*, *πόποι*, *μουνάξ*, *ἠπεροπῆα*, *ἀνάπυστα*.

7. Write down the *Nom. Sing.* and *Plu.* of:—*βοῦν*, *νηί*, *τέγεος*, *ὀξέι*, *συῶν*, *υἱέος*, *ἀριστήων*, *πολέσι*.

8. Distinguish between:—*αὐτὴν* and *ἀυτήν*. *ἐπι* and *ἐπί*. *κῆρ* and *κήρ*. *ἴδε* and *ἰδέ*. *ἀρνεῖον* and *ἀρνειόν*. *ἀρὰ* and *ἄρα*. *κράτος* and *κρατός*. *νἷος* and *υἱός*. *πόλεων* and *πολέων*. *δῶ* and *δῷ*.

9. Translate into Greek:—(1) The judge said he would do whatever he pleased. (2) If he had the gold, he would give it to his brother. (3) He was there to see his friend, but did not find him. (4) The king himself commanded the soldiers to do the same thing. (5) Virtue is a good thing for all.

INTERMEDIATE EXAMINATION.

GREEK.—EURIPIDES, MEDEA.

FRIDAY, APRIL 1ST:—MORNING, 9 TO 12.

Examiners,..... { REV. GEORGE CORNISH, LL.D.
REV. GEORGE WEIR, LL.D.

1. Translate:—

(*Assign to each extract the name of the speaker.*)

(A) Ἐπεὶ μετέστην δεῦρ' Ἰωλκίας χθονὸς
πολλὰς ἐφέλκων ξυμφορὰς ἀμηχάνους,
τί τοῦδ' ἂν εὕρημ' ἦλθον εὐτυχέστερον
ἢ παῖδα γῆμαι βασιλέως φυγὰς γεγώς;
οὐχ, ἥ σὺ κνίζει, σὸν μὲν ἐχθαίρων λέχος,
καινῆς δὲ νύμφης ἱμέρῳ πεπληγμένος,
οὐδ' εἰς ἄμιλλαν πολύτεκνον σπουδὴν ἔχων·
ἅλις γὰρ οἱ γεγῶτες οὐδὲ μέμφομαι·
ἀλλ' ὡς, τὸ μὲν μέγιστον, οἰκοῖμεν καλῶς,
καὶ μὴ σπανιζοίμεσθα, γιγνώσκων ὅτι
πένητα φεύγει πᾶς τις ἐκποδὼν φίλος,
παῖδας δὲ θρέψαιμ' ἀξίως δόμων ἐμῶν,
σπείρας τ' ἀδελφοὺς τοῖσιν ἐκ σέθεν τέκνοις
ἐς ταὐτὸ θείην, καὶ ξυναρτήσας γένος
εὐδαιμονοίην.

(B) Μή μοι σύ· πείθειν δῶρα καὶ θεοὺς λόγος·
χρυσὸς δὲ κρείσσων μυρίων λόγων βροτοῖς.
κείνης ὁ δαίμων, κεῖνα νῦν αὔξει θεὸς,
νέα τυραννεῖ· τῶν δ' ἐμῶν παίδων φυγὰς
ψυχῆς ἂν ἀλλαξαίμεθ', οὐ χρυσοῦ μόνον.
ἀλλ', ὦ τέκν', εἰσελθόντε πλουσίους δόμους
πατρὸς νέαν γυναῖκα, δεσπότιν δ' ἐμὴν,
ἱκετεύετ', ἐξαιτεῖσθε μὴ φεύγειν χθόνα,
κόσμον διδόντες· τοῦδε γὰρ μάλιστα δεῖ,
ἐς χεῖρ' ἐκείνην δῶρα δέξασθαι τάδε.
ἴθ' ὡς τάχιστα· μητρὶ δ' ὧν ἐρᾷ τυχεῖν
εὐάγγελοι γένοισθε πράξαντες καλῶς.

(C) Μὴ δῆτα, θυμὲ, μὴ σύ γ' ἐργάσῃ τάδε·
ἔασον αὐτοὺς, ὦ τάλαν, φεῖσαι τέκνων·
ἐκεῖ μεθ' ἡμῶν ζῶντες εὐφρανοῦσί σε.
μὰ τοὺς παρ' Ἅιδῃ νερτέρους ἀλάστορας,
οὔτοι ποτ' ἔσται τοῦθ' ὅπως ἐχθροῖς ἐγὼ
παῖδας παρήσω τοὺς ἐμοὺς καθυβρίσαι.
[πάντως σφ' ἀνάγκη κατθανεῖν· ἐπεὶ δὲ χρὴ,

ἡμεῖς κτενοῦμεν, οἵπερ ἐξεφύσαμεν.]
πάντως πέπρωται ταῦτα κοὐκ ἐκφεύξεται.
καὶ δὴ 'πὶ κρατὶ στέφανος, ἐν πέπλοισί τε
νύμφη τύραννος ὄλλυται, σάφ' οἶδ' ἐγώ.
ἀλλ' εἶμι γὰρ δὴ τλημονεστάτην ὁδὸν,
καὶ τοὐσδε πέμψω τλημονεστέραν ἔτι,
παῖδας προσειπεῖν βούλομαι. δότ', ὦ τέκνα,
δότ' ἀσπάσασθαι μητρὶ δεξιὰν χέρα.

2. (*a*) Explain the use of *μοι* in the 1st vs. of ext. (B); of *βροτοῖς* in 2nd; *ψυχῆς* in 5th; and show the construction of *μητρὶ* * * * *καλῶς*. (*b* Construe *ὦ τάλαν* in ext. (C), and parse and explain *σφ'* in vs. 7 of same ext. (*c*) *οἵπερ ἐξεφύσαμεν* :—explain this use of the ***mas. plu.***, and note any peculiarity in the use of the verb.

3. Parse the following words, giving the principal parts of the verbs :—*μολόντας, ἐξηύχου, ἐκβαλεῖν, μεθῶ, ἠνέσχετο, μετέστην, ἀμηχάνους, εὐτυχέστερον, γῆμαι, γεγώς, ταὐτό, σέθεν, ἀλλαξαίμεθ', τυχεῖν.*

4. Explain the construction and meaning of:—(*a*) *χρὴ δέ ξένον μὲν κάρτα προσχωρεῖν πόλει.* (*b*) *ἀπειρηκὼς φίλοις.* (*c*) *ἐπιστάτην ξεύγλαισι.* (*d*) *κακοῦ γὰρ ἀνδρὸς δωρ' ὄνησιν οὐκ ἔχει.* (*e*) *ἀπαλλάσσου πόδα.* (*f*) *οὐκ οἶδ' ἂν εἰ πείσαιμι, πειρᾶσθαι δέ χρή.* (*g*) *ἀλλὰ τῆς ἐμῆς κάκης τὸ καὶ προέσθαι μαλθακοὺς λόγους φρενός (φρενί).* (*h*) *καί τοὐσδε πέμψω τλημονεστέραν ἔτι.*

5. Write short explanatory notes on the following :—(1) *Κυανέας Συμπληγάδας.* (2) *κτανεῖν πείσασα Πελιάδας κόρας πατέρα.* (3 *οἵδε παῖδες ἐκ τρόχων* (or *τροχῶν*) *πεπαυμένοι.* (4) *πεσσοὺς προσελθών.* (5) *ἐπ' ἀμφιπύλου.* (6) *ἄκροισι λαίφους κρασπέδοις.* (7) *Πανὸς ὀργάς.* (8) *ἕλκων κῶλον ἐκπλέθρου δρόμου ταχὺς βαδιστὴς τερμόνων ἀνθήπτετο.* (9) *τὸν γέροντα τύμβον.*

6. Give as carefully as you can the etymology and meaning of:—*βαλβῖδα, κλῆδας, παιδολέτωρ, δέμας, ξυνωρίδα, ὀργάς, χρυσήλατον, ξύμβολα, χαρακτήρ, τραχεῖαν, σκαιοῖσι, βραβέυς.*

7. Note the different meanings of the following words, according as they have different accents or breathings :—*καν, παρα, φεισαι, γελων, μεθεις, εδρας, σωφρονων, οιος, εἰκω, ῥιψαι, χρυσους, ἰει.*

8. What feet are admissible in Iambic Trimeter? Mark the scanning in the first five lines in extract (A).

9. (*a*) Write a sketch of the life of Euripides, giving the dates of his birth and death. (*b*) Write a synopsis of the Medea. (*c*) Where is the scene of the play laid? (*d*) Who composed the chorus?

THIRD YEAR.

GREEK.—SOPHOCLES.—ELECTRA.

FRIDAY, APRIL 8TH:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate:—

(A) ἀλλ' οὐ μὲν δὴ
λήξω θρήνων, στυγερῶν τε γόων,
ἐςτ' ἂν παμφεγγεῖς ἀστρων
ῥιπάς, λεύσσω τε τόδ' ἦμαρ,
μὴ οὐ, τεκνολέτειρ' ὥς τις ἀηδών,
ἐπὶ κωκυτῷ, τῶνδε πατρῴων
πρὸ θυρῶν, ἠχὼ πᾶσι προφωνεῖν.
ὦ δῶμ' Ἀΐδου καὶ Περσεφόνης,
ὦ χθόνι' Ἑρμῆ, καὶ πότνι' Ἀρά,
σεμναί τε θεῶν Ἐρινύες, αἳ τοὺς
ἀδίκως θνήσκοντας ὁρᾶτε,
καὶ τοὺς εὐνὰς ὑποκλεπτομένους,
ἔλθετ', ἀρήξατε, τίσασθε πατρὸς
φόνον ἡμετέρου,
καί μοι τὸν ἐμὸν πέμψατ ἀδελφόν.
μούνη γὰρ ἄγειν οὐκ ἔτι σωκῶ
λύπης ἀντίῤῥοπον ἄχθος.

(B) ἀνειμένη μὲν, ὡς ἔοικας, αὖ στρέφει,
οὐ γὰρ πάρεστ' Αἴγισθος, ὃς σ' ἐπεῖχ' ἀεὶ
μή τοι θυραίαν γ' οὖσαν αἰσχύνειν φίλους·
νῦν δ' ὡς ἄπεστ' ἐκεῖνος, οὐδὲν ἐντρέπει
ἐμοῦ γε· καίτοι πολλὰ πρὸς πολλούς με δὴ
ἐξεῖπας ὡς θρασεῖα καὶ πέρα δίκης
ἄρχω, καθυβρίζουσα καὶ σὲ καὶ τὰ σά.
ἐγὼ δ' ὕβριν μὲν οὐκ ἔχω· κακῶς δέ σε
λέγω κακῶς κλύουσα πρὸς σέθεν θαμά.
πατὴρ γὰρ, οὐδὲν ἄλλο σοὶ πρόσχημ' ἀεὶ,
ὡς ἐξ ἐμοῦ τέθνηκεν. ἐξ ἐμοῦ· καλῶς
ἐξοιδα· τῶνδ' ἀρνησις οὐκ ἔνεστί μοι.
ἡ γὰρ Δίκη νιν εἶλεν, οὐκ ἐγὼ μόνη,
ᾗ χρῆν σ' ἀρήγειν, εἰ φρονοῦσ' ἐτύγχανες.

(C) χὤπως μὲν ἐν πολλοῖσι παῦρά σοι λέγω,
οὐκ οἶδα τοιοῦδ' ἀνδρὸς ἔργα καὶ κράτη.
ἓν δ' ἴσθ'· ὅσων γὰρ εἰσεκήρυξαν βραβῆς
δρόμων διαύλων ἆθλ' ἅπερ νομίζεται,

τούτων ἐνεγκὼν πάντα τἀπινίκια
ὠλβίζετ', Ἀργεῖος μὲν ἀγκαλούμενος,
ὄνομα δ' Ὀρέστης, τοῦ τὸ κλεινὸν Ἑλλάδος
Ἀγαμέμνονος στράτευμ' ἀγείραντός ποτε.
καὶ ταῦτα μὲν τοιαῦθ'· ὅταν δέ τις θεῶν
βλάπτῃ, δύναιτ' ἂν οὐδ' ἂν ἰσχύων φυγεῖν.
κεῖνος γὰρ ἄλλης ἡμέρας, δθ' ἱππικῶν
ἦν ἡλίου τέλλοντος ὠκύπους ἀγών,
εἰσῆλθε πολλῶν ἁρματηλατῶν μέτα.

2. (*a*) Write a sketch of the life and times of Sophocles. (*b*) Point out the leading characteristics of his dramas as compared with those of Euripides. (*c*) Write an outline of the plot of the Electra.

3. Translate, and explain the following grammatical usages :—(*a*) *φάσκειν Μυκήνας ὁρᾶν.* (*b*) *κινεῖ φθέγματ' σαφῆ.* (*c*) *μέλαινα ἄστρων ἐκλέλοιπεν εὐφρόνη.* (*d*) *ἄσκευον ἀσπίδων τε καὶ στρατοῦ.* (*e*) *ἐν δὲ πᾶς ἐμεστώθη δρόμος κτύπου κροτητῶν ἁρμάτων.* (*f*) *εἰς τὸ κλεινὸν Ἑλλάδος πρόσχημ' ἀγῶνος.* (*g*) *φίλοισί τε ξυνοῦσαν, οἷς ξύνειμι νῦν, εὐημεροῦσαν καὶ τέκνων ὅσων ἐμοι δύσνοια μὴ πρόσεστιν ἢ λύπη πικρά.*

4. Give carefully the etymology and meaning of the following terms:—*πρόσχημα, κηλῖδας, ἠθάς, θρέμμα, στόμαργον, κυναγόν, τμητοῖς, σειραῖον, κροτητῶν, Λύκειος, βραβῆς, βάξιν.*

5. What different interpretations have been given of the following, severally ? (*a*) *οὐ γάρ σε μὴ γήρᾳ τε καὶ χρόνῳ μακρῷ γνῶσ' ὠδ' ἠνθισμένον.* (*b*) *ἐμασχαλίσθη κἀπὶ λουτροῖσιν κάρα κηλῖδας ἐξέμαξεν.* (*c*) *τὸ γὰρ δίκαιον οὐκ ἔχει λόγον δυοῖν ἐρίζειν ἀλλ' ἐπισπεύδειν τὸ δρᾶν.* (*d*) *δίδαξόν με τοῦ χάριν τίνων.* (*e*) *τὰ πολλὰ πενεύματ' ἐσχ' ἐν Αὐλίδι.* (*f*) *φάσματα δισσῶν ὀνείρων.*

6. Parse the following giving the *Pres. Inf.* of each :—*ὤλισθε, ἐστασαν, ᾔξαν, ἔπηλαν, ἐπαιτιῶ, ἐφῆς, παρεῖτο, ὑπεικάθοιμι, ὑπεξέθου, ἠνθισμένον.*

7. (*a*) Give the *Nom. Sin.* and *Plu.* of *ὀνείρων.* (*b*) *ἱππικῶν ἀγών* : —Parse and explain *ἱππικῶν.* (*c*) *ἡμίν* :—Note the accent, and quantity of the ultimate. (*d*) Discuss the following variants :—*ὄρα μὴ τιθῇ—τίθης. ἰσώσας τῇ φύσει—τἀφέσει—τὰ τέρματα. ἀθλ' ἅπερ—πεντάεθλ' —νομίζεται. τοιαῦτα του—τοῦ—παρόντος ἔκλυον. τήνδ' ἀλιπαρῆ—τήνδε λιπαρῆ τρίχα.*

8. (*a*) Distinguish between :—*ἄχων* and *ἀγών. ἔπει* and *ἐπεί. θῦσαι* and *θύσαι. ἄρα, ἀρα* and *ἀρά. ἀμὸς* and *ἀμός. χρῇ* and *χρή. γῆρα* and *γηράς. οἰκοι* and *οἴκοι.* (*b*) Wnat is meant by *Attic Attraction?* (*c*) Write down (*1st Sing. Ind. Act.*) the principal parts of:—*ἐλαύνω, θνήσκω, δίδωμι, ἀναλίσκω, λαμβάνω.*

B. A. ORDINARY EXAMINATION.

GREEK.—{THUCYDIDES. BOOK VII. / SOPHOCLES.—ELECTRA.

WEDNESDAY, APRIL 13TH:—MORNING, 9 TO 12.

Examiners,..... { REV. GEORGE CORNISH, LL.D. / REV. GEORGE WEIR, LL.D.

1. Translate:—

(A) Ἐν τούτῳ δὲ ὁ Γύλιππος τῶν ἐν τῷ Πλημμυρίῳ Ἀθηναίων πρὸς τὴν θάλασσαν ἐπικαταβάντων καὶ τῇ ναυμαχίᾳ τὴν γνώμην προσεχόντων φθάνει προσπεσὼν ἅμα τῇ ἕῳ αἰφνιδίως τοῖς τείχεσι, καὶ αἱρεῖ τὸ μέγιστον πρῶτον, ἔπειτα δὲ καὶ τὰ ἐλάσσω δύο, οὐχ ὑπομεινάντων τῶν φυλάκων, ὡς εἶδον τὸ μέγιστον ῥᾳδίως ληφθέν. καὶ ἐκ μὲν τοῦ πρώτου ἁλόντος χαλεπῶς οἱ ἄνθρωποι, ὅσοι καὶ ἐς τὰ πλοῖα καὶ ὁλκάδα τινὰ κατέφυγον, ἐς τὸ στρατόπεδον ἐξεκομίζοντο· τῶν γὰρ Συρακοσίων ταῖς ἐν τῷ μεγάλῳ λιμένι ναυσὶ κρατούντων τῇ ναυμαχίᾳ ὑπὸ τριήρους μιᾶς καὶ εὖ πλεούσης ἐπεδιώκοντο· ἐπειδὴ δὲ τὰ δύο τειχίσματα ἡλίσκετο, ἐν τούτῳ καὶ οἱ Συρακόσιοι ἐτύγχανον ἤδη νικώμενοι, καὶ οἱ ἐξ αὐτῶν φεύγοντες ῥᾷον παρέπλευσαν. αἱ γὰρ τῶν Σαρακοσίων αἱ πρὸ τοῦ στόματος νῆες ναυμαχοῦσαι βιασάμεναι τὰς τῶν Ἀθηναίων ναῦς οὐδενὶ κόσμῳ ἐσέπλεον καὶ ταραχθεῖσαι περὶ ἀλλήλας παρέδοσαν τὴν νίκην τοῖς Ἀθηναίοις.

(B) Ἄνδρες στρατιῶται Ἀθηναίων τε καὶ τῶν ἄλλων ξυμμάχων, ὁ μὲν ἀγὼν ὁ μέλλων ὁμοίως κοινὸς ἅπασιν ἔσται, περὶ τε σωτηρίας καὶ πατρίδος ἑκάστοις οὐχ ἧσσον ἢ τοῖς πολεμίοις· ἢν γὰρ κρατήσωμεν νῦν ταῖς ναυσίν, ἔστι τῳ τὴν ὑπάρχουσάν που οἰκείαν πόλιν ἐπιδεῖν. ἀθυμεῖν δὲ οὐ χρὴ οὐδὲ πάσχειν ὅπερ οἱ ἀπειρότατοι τῶν ἀνθρώπων, οἱ τοῖς πρώτοις ἀγῶσι σφαλέντες ἔπειτα διὰ παντὸς τὴν ἐλπίδα τοῦ φόβου ὁμοίαν ταῖς ξυμφοραῖς ἔχουσιν. ἀλλ' ὅσοι τε Ἀθηναίων πάρεστε, πολλῶν ἤδη πολέμων ἔμπειροι ὄντες, καὶ ὅσοι τῶν ξυμμάχων, ξυστρατευόμενοι ἀεί, μνήσθητε τῶν ἐν τοῖς πολέμοις παραλόγων, καὶ τὸ τῆς τύχης κἂν μεθ' ἡμῶν ἐλπίσαντες στῆναι καὶ ὡς ἀναμαχούμενοι ἀξίως τοῦδε τοῦ πλήθους ὅσον αὐτοὶ ὑμῶν αὐτῶν ἐφορᾶτε, παρασκευάζεσθε. ἃ δὲ ἀρωγὰ ἐνείδομεν ἐπὶ τῇ τοῦ λιμένος στενότητι πρὸς τὸν μέλλοντα ὄχλον τῶν νεῶν ἔσεσθαι καὶ πρὸς τὴν ἐκείνων ἐπὶ τῶν καταστρωμάτων παρασκευήν, οἷς πρότερον ἐβλαπτόμεθα, πάντα καὶ ἡμῖν νῦν ἐκ τῶν παρόντων μετὰ τῶν κυβερνητῶν ἐσκεμμένα ἡτοίμασται. καὶ γὰρ τοξόται πολλοὶ καὶ ἀκοντισταὶ ἐπιβήσονται καὶ ὄχλος ᾧ ναυμαχίαν μὲν ποιούμενοι ἐν πελάγει οὐκ ἂν ἐχρώμεθα διὰ τὸ βλάπτειν ἂν τὸ τῆς ἐπιστήμης τῇ βαρύτητι τῶν νεῶν, ἐν δὲ τῇ ἐνθάδε ἐναγκασμένῃ ἀπὸ τῶν νεῶν πεζομαχίᾳ πρόσφορα ἔσται.

2. Ext. (B). (*a*) τῶν ἄλλων ξυμμάχων:—Explain this idiomatic use of ἄλλων. (*b*) τὸ τῆς τύχης, τὸ τῆς ἐπιστήμης:—What Genitive, and to what is the phrase equivalent? (*c*) Define the terms, ὑπήκοοι, ξύμμαχοι, φόρου ὑποτελεῖς, αὐτόνομοι. Also distinguish between νεώριον and νεώσοικοι.

3. (*a*) Briefly narrate the events (with dates) referred to in the following extt. :—(1) ὅτι ἐς Πλάταιαν ἦλθον Θηβαῖοι ἐν σπονδαῖς. (2) Αἰγινῆται, οἳ τότε Αἴγιναν εἶχον. (3) παραπλήσιά τε ἐπεπόνθεσαν καὶ ἔδρασαν αὐτοὶ ἐν Πύλῳ. (*b*) Distinguish between Σικανοί, Σικελοί, and Σικελιῶται.

4. Translate literally the following passages, and note the various readings:—(1) *οἱ γὰρ Κορίνθιοι, ὡς οἱ τε πρέσβεις αὐτοῖς ἦκον, καὶ τὰ ἐν τῇ Σικελίᾳ βελτίω ἤγγελλον, νομίσαντες οὐκ ἀκαιρον καὶ τὴν προτέραν πέμψιν τῶν νεῶν ποιήσασθαι, πολλῷ μᾶλλον ἐπερρώντο, καὶ ἐν ὀλκάσι, παρεσκευάζοντο αὐτοί τε ἀποστελοῦντες ὁπλίτας εἰς τὴν Σικελίαν (ἐν τῇ Σικελίᾳ), καὶ ἐκ τῆς ἄλλης Πελοποννήσου οἱ Λακεδαιμόνιοι τῷ αὐτῳ τρόπῳ πέμψοντες.* (2) *ᾧ γὰρ ἐκεῖνοι τοὺς πέλας οὐ δυνάμει ἐστιν ὅτε προὔχοντες, τῷ δὲ θράσει, ἐπιχειροῦντες, καταφοβοῦσι, καὶ σφᾶς ἂν τὸ αὐτὸ ὁμοίως τοῖς ἐναντίοις ὑποσχεῖν (ὑπαρχεῖν).* (3) *ἣν (στρατιαν) οὐδ' ἂν μετέπεμψαν οἱ Συρακούσιοι, εἰ ἐκεῖνος εὐθὺς ἐπέκειτο· ἱκανοὶ γὰρ αὐτοὶ οἰόμενοι εἶναι, ἅμα τ' ἂν ἐμαθον ἧσσους ὄντες, καὶ ἀποτετειχισμένοι ἂν ἦσαν· ὥστε μηδ' εἰ μετέπεμψαν, ἔτι ὁμοίως ἂν αὐτοὺς ὠφελεῖν.*

5. Translate :—

(C)

ΧΟ. *μηδὲν πρὸς ὀργὴν πρὸς θεῶν· ὡς τοῖς λόγοις*
ἐνεστιν ἀμφοῖν κέρδος, εἰ σὺ μὲν μάθοις
τοῖς τῆσδε χρῆσθαι, τοῖς δὲ σοῖς αὖτη πάλιν.
ΧΡ. *ἐγὼ μέν, ὦ γυναῖκες, ἠθάς εἰμί πως*
τῶν τῆσδε μύθων· οὐδ' ἂν ἐμνήσθην ποτὲ,
εἰ μὴ κακὸν μέγιστον εἰς αὐτὴν ἰὸν
ἤκουσ', ὃ ταύτην τῶν μακρῶν σχήσει γόων.
ΗΛ. *φέρ' εἰπὲ δὴ τὸ δεινόν. εἰ γὰρ τῶνδέ μοι*
μεῖζόν τι λέξεις, οὐκ ἂν ἀντείποιμ' ἔτι.
ΧΡ. *ἀλλ' ἐξερῶ τοι πᾶν ὅσον κάτοιδ' ἐγώ.*
μέλλουσι γάρ σ', εἰ τῶνδε μὴ λήξεις γόων,
ἐνταῦθα πέμψειν ἔνθα μή ποθ' ἡλίου
φέγγος προσόψει, ζῶσα δ' ἐν κατηρεφεῖ
στέγῃ χθονὸς τῆσδ' ἐκτὸς ὑμνήσεις κακά.
πρὸς ταῦτα φράζου καί με μή ποθ' ὕστερον
παθοῦσα μέμψῃ. νῦν γὰρ ἐν καλῷ φρονεῖν.

(D)

(*Assign the names of the speakers.*)

μήτηρ καλεῖται· μητρὶ δ' οὐδὲν ἐξισοῖ.
τί δρῶσα ; πότερα χερσὶν, ἢ λύμῃ βίου ;
καὶ χερσὶ καὶ λύμαισι καὶ πᾶσιν κακοῖς.
οὐδ' οὐπαρήξων οὐδ' ὁ κωλύσων πάρα ;
οὐ δῆθ'. ὃς ἦν γάρ μοι σὺ προὔθηκας σποδόν.
ὦ δύσποτμ', ὡς ὁρῶν σ' ἐποικτείρω πάλαι.
μόνος βροτῶν νυν ἴσθ' ἐποικτείρας ποτέ.

μόνος γὰρ ἥκω τοῖσι σοῖς ἀλγῶν κακοῖς.
οὐ δή ποθ' ἡμῖν ξυγγενὴς ἥκεις ποθέν;
ἐγὼ φράσαιμ' ἄν, εἰ τὸ τῶνδ' εὔνουν πάρα.
ἀλλ' ἐστὶν εὔνουν, ὥστε πρὸς πιστὰς ἐρεῖς.
μέθες τόδ' ἄγγος νῦν, ὅπως τὸ πᾶν μάθῃς.
μὴ δῆτα πρὸς θεῶν τοῦτό μ' ἐργάσῃ, ξένε.
πιθοῦ λέγοντι κοὐχ ἁμαρτήσει ποτέ.
μὴ πρὸς γενείου μὴ 'ξέλῃ τὰ φίλτατα.
οὗ φημ' ἐάσειν. ὦ τάλαιν' ἐγὼ σέθεν,
Ὀρέστα, τῆς σῆς εἰ στερήσομαι ταφῆς.
εὔφημα φώνει. πρὸς δίκης γὰρ οὐ στένεις.
πῶς τὸν θανόντ' ἀδελφὸν οὐ δίκῃ στένω;
οὐ σοι προσήκει τήνδε προσφωνεῖν φάτιν.
οὕτως ἄτιμός εἰμι τοῦ τεθνηκότος;
ἄτιμος οὐδενὸς σύ· τοῦτο δ' οὐχὶ σόν.

6. (*a*) μηδὲν πρὸς ὀργὴν πρὸς θεῶν :—Construe μηδέν, and give the force of πρὸς in both phrases. (*b*) ἠθάς :—What dialect, and whence derived? (*c*) πεσούμεθ' εἰ χρή, πατρὶ τιμωρούμενοι—τιμωρούμεναι :—Which is the right reading, and why?

7. Explain the use of the *Genitive* in :—(*a*) οὔτε μητρὸς ἦσθα μᾶλλον ἢ κἀμοῦ φίλος. (*b*) ὦ τάλαιν' ἐγὼ σέθεν. (*c*) οἵπερ ἐστάλην ὁδοῦ. (*d*) ἄτιμός εἰμι τοῦ τεθνηκότος. (*e*) τὸ τούτων μῖσος. (*f*) ἀνάριθμος θρήνων.

8. Parse the following words, giving the principal parts of the verbs: —ἐσώθησαν, κακοπαθείαις, δεδιήτημαι, λωφήσειαν, ἀνεκτά, καταπέπληχθε, ἱδρυθέντας, πεπτωκυῖαν, μέθες, 'ξέλῃ, τεθνηκότος, οὐπαρήξων.

9. (*a*) Name accurately the metre of ext (C); give the scheme of it, and scan the first four vss. of the same ext. (*b*) Write an account of the plot of the Electra. (*c*) State the different parts in the structure of a Greek play. (*d*) What changes were made by Sophocles in the Greek Drama?

FIRST YEAR.

LATIN.—CICERO.—SELECT LETTERS.

MONDAY, APRIL 4TH :—MORNING, 9 TO 12.

Examiner,..... .....REV. GEORGE CORNISH, LL.D.

1. Translate :—

(A) Honestissime viximus, floruimus; non vitium nostrum, sed virtus nostra nos adflixit. Peccatum est nullum, nisi quod non una animam cum ornamentis amisimus. Sed si hoc fuit liberis nostris gratius, nos vivere,

cetera, quamquam ferenda non sunt, feramus. Atque ego, qui te confirmo, ipse me non possum. Clodium Philhetaerum, quod valetudine oculorum inpediebatur, hominem fidelem, remisi. Sallustius officio vincit omnis. Pescennius est perbenevolus nobis, quem semper spero tui fore observantem. Sicca dixerat se mecum fore, sed Brundisio discessit. Cura, quod potes, ut valeas et sic existimes, me vehementius tua miseria quam mea commoveri. Mea Terentia, fidissima atque optima uxor, et mea carissima filiola, et spes reliqua nostra, Cicero, valete. pr. K. Mai. Brundisio.

(B) Nam, quanta sit in Quinto fratre meo comitas, quanta iucunditas, quam mollis animus ad accipiendam et ad deponendam offensionem, nihil attinet me ad te, qui ea nosti, scribere. Sed accidit perincommode, quod eum nusquam vidisti; valuit enim plus quod erat illi nonnullorum artificiis inculcatum quam aut officium aut necessitudo aut amor vester ille pristinus, qui plurimum valere debuit. Atque huius incommodi culpa ubi resideat facilius possum existumare quam scribere; vereor enim ne, dum defendam meos, non parcam tuis; nam sic intellego, ut nihil a domesticis volneris factum sit, illud quidem, quod erat, eos certe sanare potuisse. Sed huiusce rei totius vitium, quod aliquanto etiam latius patet quam videtur, praesenti tibi commodius exponam.

(C) Postridie senatus frequens; et omnes *consulares* nihil Pompeio postulanti negarunt; ille legatos quindecim cum postularet, me principem nominavit et ad omnia me alterum se fore dixit. Legem consules conscripserunt, qua Pompeio per quinquennium omnis potestas rei frumentariae toto orbe terrarum daretur; alteram Messius, qui omnis pecuniae dat potestatem et adiungit classem et exercitum et *maius imperium* in provinciis, quam sit eorum, *qui eas obtineant*: illa nostra lex consularis nunc modesta videtur, haec Messii non ferenda. Pompeius illam velle se dicit, familiares hanc. Consulares duce Favonio fremunt; nos tacemus, et eo magis, quod *de domo nostra* nihil adhuc *pontifices* responderunt: qui si sustulerint *religionem*, aream praeclaram habebimus; superficiem consules ex *senatus consulto* aestimabunt: sin aliter, demolientur, suo nomine *locabunt*, rem totam aestimabunt.

2. (*a*) Give the date of ext. (A) and a short account of the circumstances n which it was written. (*b*) To whom was ext. (B) written? (*c*) In ext. (C) explain the meaning of the words in Italics. (*d*) Translate and explain carefully the Syntax of the following ext:—Hunc, mi Caesar, sic velim omni tua comitate complectare, ut omnia, quae per me possis adduci ut in meos conferre velis, in unum hunc conferas.

3. Parse the following verbs, giving the *Present Infinitive* of each:—Complectare, exirem, relaxaro, decesse, exegero, periremus, luxerunt, accesserit, rejectum iri, sustulimus, decesse, subinvitaris.

4. Explain the following references:— (1) Tabulam Valeriam. (2) Oscos ludos. (3) Ab Italia non satis abesse. (4) Stabianum perforasti

(5) Sp. Mæcius. (6) Noster Aesopus. (7) Operam et oleum perdidisse. (8) Familiam ducit. (9) Archilochio edicto.

5. (*a*) Expand and translate the following :—(1) D. a. d. VI. K. Decemb. (2) D. a. d. III. Non. Oct. (3) Acta Kal. Sext. (4) HS. centiens. (5) L. J. Caes. C. M. Figulo Coss. (6) M. Tullius M. F. Cicero s. d. Cn. Pompeio Cn. F. Magno. Imp.

6. Give two (or more) meanings of each of the following words, and mark the quantities of each:—annuis, leporis, levis, signa, canis, facies, mensis, pateris, quis, solis.

7. (*a*) Decline throughout:—(1) Uterque consul; (2) grave fenus; (3) nix alba. (*b*) Distinguish between the meaning of vestri and vestrum; hic, iste, ille, is; quis homo? and qui homo? (*c*) Conjugate (*a*) the *Pres. Ind.* of *prosum*; (*β*) the *Perf. Subjunct.* of *cedo*; and (*γ*) the *Fut. Perf.* of *capio*.

8. Turn into Latin :— 1. What will become of the boy? 2. The men went to the City of Antioch, once a famous place. 3. Husband, wife and children were taken and slain. 4. The rest of the soldiers at the end of the battle stood on the top of the hill, which they had taken. 5. Scipio whose surname was Africanus. 6. They may (*licet*) be happy. (Express this in as many ways as you can.)

FIRST YEAR.

HISTORY.—HISTORY OF GREECE AND ROME.

TUESDAY, APRIL 5TH:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. (*a*) Give a general account of the physical geography and climate of Greece. (*b*) Define the geographical position of the following places, severally, and name the states to which they belonged:—Pherae, Iolcos, Buthrotum, Thermopylæ, Platæa, Naupactus, Eleusis, Phyle, Pylos, Tegea. (*c*) Explain the term *Euripus*.

2. (*a*) Give the supposed genealogy of the four great divisions of the Greek race. (*b*) Who was Cadmus, and whence did he come? (*c*) Name the three most famous of the expeditions of the Heroic Age.

3. What is meant by *The Return of the Heracleidæ*?

4. What institutions tended to secure unity among the various states of Hellas? What circumstances and national characteristics operated to prevent this unity?

5. Explain the terms *Despotism*, *Oligarchy*, and *Democracy*. Point out in what states of Greece these were severally to be found.

6. Describe the political institutions of Athens and Sparta at the time of the Persian wars.

7. (*a*) Give an account of the foundation of Rome, and of its first form of government. (*b*) By what events was this form of government brought to an end? (*c*) Mention important events that took place during the period of this form of government.

8. (*a*) Name the most important wars by which Rome gained the supremacy over the various states of Italy. (*b*) At what date was her sovereignty over the whole peninsula established?

9. What magistrates were there under the Republic, and what were their respective duties.

10. (*a*) Represent or describe, by a map or words, the geographical position of Sicily. (*b*) Point out its political importance in the history of Rome. (*c*) Define the geographical situation of the following places, and name (with date) some important event connected with each:—Saguntum, Furculae Caudinae, Cannae, Veii, Mons Sacer, Insulae Aegates.

INTERMEDIATE EXAMINATION.

LATIN.—HORACE.—EPISTLES, BOOK I.

MONDAY, APRIL 4TH:—MORNING, 9 TO 12.

Examiners,..... ..... { REV. GEORGE CORNISH, LL.D. / REV. GEORGE WEIR, LL.D.

1. Translate:—

(A) Vilius argentum est auro, virtutibus aurum.
O cives, cives, quaerenda pecunia primum est;
Virtus post nummos! Haec Ianus summus ab imo
Perdocet, haec recinunt iuvenes dictata senesque,
Laevo suspensi loculos tabulasque lacerto.
Est animus tibi, sunt mores et lingua fidesque,
Sed quadringentis sex septem millia desunt;
Plebs eris. At pueri ludentes: rex eris, aiunt,
Si recte facies. Hic murus aëneus esto:
Nil conscire sibi, nulla pallescere culpa.

(B) Si pranderet olus patienter regibus uti
Nollet Aristippus. Si sciret regibus uti
Fastidiret olus qui me notat. Utrius horum
Verba probes et facta doce, vel junior audi
Cur sit Aristippi potior sententia; namque
Mordacem Cynicum sic eludebat, ut aiunt:
Scurror ego ipse mihi, populo tu: rectius hoc et
Splendidius multo est. Equus ut me portet, alat rex,

Officium facio : tu poscis vilia rerum,
Dante minor quamvis fers te nullius egentem.
Omnis Aristippum decuit color et status et res,
Tentantem majora, fere praesentibus aequum.
Contra quem duplici panno patientia velat
Mirabor vitae via si conversa decebit.

2. Translate, parsing the words in Italics :—

(*a*) Quo teneam vultus mutantem *Protea* nodo ?
Quid pauper ? ride ; mutat coenacula, lectos,
Balnea, tonsores ; conducto *navigio* aeque
Nauseat ac *locuples*, quem ducit priva triremis.

(*β*) Quid mihi Celsus agit ? monitus multumque monendus,
Privatas ut quaerit *opes* et *tangere* vitet
Scripta, Palatinus quaecunque recepit Apollo.

(*γ*) Tu, quotus esse *velis*, rescribe ; et rebus *omissis*
Atria servantem *postico* falle clientem.

(*δ*) Crudi tumidique lavemur,
Quid deceat, quid non, *obliti*, Caerite cera
Digni, remigium vitiosum Ithacensis Ulixei,
Cui potior patria fuit interdicta voluptas.

(*ε*) Mercatur. Ne te longis *ambagibus* ultra
Quam satis est morer, ex nitido fit rusticus, atque
Sulcos et vineta crepat mera, praeparat ulmos,
Immoritur studiis, et amore senescit habendi.

(*ζ*) Post haec, ut valeat, quo pacto rem *gerat* et se,
Ut placeat Iuveni, *percontare*, utque cohorti.

(*η*) Haec tibi dictabum post fanum *putre* Vacunae,
Excepto quod non simul esses, cetera laetus.

3. Write explanatory notes on :—(1) Protea ; (2) Coenacula ; (3) lectos ; (4) Vacunae ; (5) Palatinus Apollo ; (6) Caerite cera ; (7) Iuveni.

4. (*a*) Distinguish two verbs *plecto*, and give the Greek for each ? (*b*) Explain the construction of :—(1) *Mihi*, in ext (*β*) ; (2) *rebus omissis*, in (*γ*) ; (3) *cera*, in (*δ*) ; (4) *habendi*, in (*ε*) ; (5) *Excepto* and *cetera*, in (*η*) ; (6) *magna* coronari *Olympia*, in (A).

5. Explain any peculiarity of construction in the following :—(1) Nullius addictus jurare in verba magistri. (2) Laevo suspensi loculos tabulamque lacerto. (3) Antenor censet belli praecidere causam. (4) Patiar vel inconsultus haberi. (5) Pane egeo jam mellitis potiore placentis. (6) Vir bonus et sapiens dignis ait esse paratus.

6. Write short explanatory notes on :—(*a*) Vel partes mimum tractare secundas. (*b*) Rixatur de lana saepe caprina. (*c*) Dum peregre est animus sine corpore velox. (*d*) Seu pisces seu porrum et caepe trucidas. (*e*) Et amat spatiis obstantia rumpere claustra. (*f*) Dum tua navis in alto est. (*g*) Utroque pollice. (*h*) Majores pennas nido extendisse.

7. Give the meaning and derivation of the following words :—Camena, catellam, periscelidem, diludia, personam, catellus, cœnacula, exilis, viatica, salebras, chlamydem, planum.

8. (*a*) A short account of the two philosophers referred to in ext. (B). (*b*) A sketch of the life of Horace, naming the most famous of his contemporaries in literature and politics.

INTERMEDIATE EXAMINATION.

TUESDAY, APRIL 5TH :—MORNING, 9 TO 12.

LATIN PROSE COMPOSITION.

Examiners,..... { REV. GEORGE CORNISH, LL.D. / REV. GEORGE WEIR, LL.D.

Translate into Latin :—

There was a wooden bridge over the Tiber at the bottom of the hill, and the Etruscans followed close upon the Romans to win the bridge; but a single man named Horatius Cocles stood fast upon the bridge, and faced the Etruscans; two others then resolved to stay with him, Spurius Lartius and Titus Herminius; and these three men stopped the Etruscans, while the Romans, who had fled over the river, were busy in cutting away the bridge. When it was nearly all cut away, Horatius made his two companions leave him, and pass over the bridge into the city. Then he stood alone on the bridge, and defied all the army of the Etruscans; and they showered their javelins upon him, and he caught them on his shield, and stood yet unhurt. But just as they were rushing on him, to drive him from his post by main force, the last beams of the bridge were cut away, and it fell with a mighty crash into the river; and while the Etruscans wondered, and stopped in their course, Horatius turned and prayed to the god of the river, "O father Tiber, I pray thee to receive these arms, and me who bear them, and to let thy waters befriend and save me." Then he leapt into the river; and though the darts fell thick around him, yet they did not hit him, and he swam across to the city safe and sound.

THIRD YEAR.

LATIN.—PLAUTUS.—AULULARIA.

MONDAY, APRIL 11TH:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate into English:—

(A)

EU. Heia, Megadore, haud decorum facinus *tuis factis* facis,
ut inopem atque innoxium abs te atque abs tuis me irrideas:
nam de te neque *re* neque *verbis* merui, ut faceres quod facis.
ME. Neque edepol ego te *derisum* venio, neque derideo,
neque dignum arbitror. EU. Cur igitur poscis meam gnatam tibi?
ME. Ut propter me tibi sit melius, mihique propter te et tuos.
EU. Venit hoc *mihi* in mentem, Megadore, ted esse hominem divitem,
factiosum: me item esse hominem pauperum pauperrumum:
nunc si filiam locassim meam tibi, in mentem venit,
te bovem esse, et me esse asellum: ubi tecum coniunctus siem,
ubi onus nequeam ferre pariter, iaceam ego asinus in luto,
tu me bos haud magis respicias, natus quasi nunquam siem;
et te utar *iniquiore*, et meus med ordo irrideat;
neutrubi habeam stabile stabulum, siquid *divorti* fuat:
asini me mordicus scindant, boves incursent cornibus:
hoc magnum est periclum, me ab asinis ad boves transcendere.
ME. *Quam* ad probos propinquitate *proxume* te adiunxeris,
tam optimum est.

(B)

EU. Tu modo cave quoiquam *indicassis*, aurum meum esse istic, Fides:
non metuo, ne quisquam inveniat: ita probe in latebris situm est.
Edepol ne *illic* pulcram praedam agat, si quis illam invenerit
aulam onustam *auri*. Verum id te quaeso ut prohibessis, Fides.
Nunc lavabo, ut rem divinam faciam, ne affinem morer,
quin, ubi arcessat, meam extemplo filiam ducat domum.
Vide, Fides, etiam atque etiam nunc, salvam ut aulam *abs te* auferam:
tuae fide concredidi aurum; in tuo luco et fano est situm.
STR. Di inmortales, quod ego hunc hominem facinus audio eloqui:
se aulam onustam auri abstrusisse hic intus in fano *Fide*,
cave tu *illi* fidelis, quaeso, potius *fueris*, quam mihi.
Atque hic pater est, ut ego opinor, huius erus meus quam amat.
Ibo hinc intro, perscrutabor fanum, si inveniam uspiam
aurum, dum hic est occupatus. Sed si reperero, o Fides,
mulsi congialem plenam faciam tibi fideliam;
id adeo tibi faciam, verum ego mihi bibam, id ubi fecero.

2. Construe carefully the words printed in Italics in the above extracts.

3. (*a*) Name the metre used in the above extt., and scan the first three vss. of ext. (B). (*b*) Point out any usages which illustrate the unsettled character of the language in the time of Plautus. (*c*) Give an outline of the plot of this drama, naming the characters.

4. Write down in the ordinary forms the equivalents of the following verbs, naming the mood and tense of each:—adaxint, duit, locassim, perplexarier, edim, prohibessis, impetrassere, rescisse, benedice, indicassis, fuat, faxim.

5. Explain the formation and meaning of the following:—ubi, uspiam, illic, frugi, foras, quin, palam, sicubi, quasi, praequam, sis, noenum, pol, profecto, ilico, meai, perendie, quoius.

6. Explain the following words, both as to meaning and derivation:—Bubula censione, curionem, manubrium, temperi, Laverna, bacchanal, Lar, temeti, puteum, obsonium, nundinalis, phylacistæ, bellum, mecastor.

7. (*a*) Translate and distinguish between:—Conduxi cædendum, loces efferundum; vapulare, verberare. (*b*) Give two (or more) meanings of each of the following words, and mark the quantities:—Cadis, canet, canis, fides, gratis, labores, metas, orbis, passus, quis, morata, vivo. (*c*) Give the import of the Prepositions in:—*Inter*bibere; *pro*loqui; *pro*fanum; *per*bene *a* pecunia; *in* viros dividere; *apud* nos; *pro* re nitorem.

8. Translate into Latin:—

After the battle of Cannæ, while others were congratulating Hannibal on his signal victory, and advising him to grant his weary soldiers, whose bravery had been so conspicuous, one day's repose, Maharbal, general of the horse, urged him on the other hand to lead his victorious troops straightway to Rome; for if he now approached the city, the terrified inhabitants would not oppose him, and within a few days he would feast in the capitol. When Hannibal said that it required time to deliberate on so important a matter, Maharbal exclaimed with a sigh, "You know, Hannibal, how to conquer, but how to improve a victory you know not." That day's delay is believed to have proved the safety of Rome; for Hannibal, after losing this opportunity of completing his work, never had such another presented to him.

B. A. ORDINARY EXAMINATION.

LATIN.—{TACITUS.—ANNALS, BOOK I.
{JUVENAL.—SATIRES, VIII. AND X.

THURSDAY, APRIL 14TH:—MORNING, 9 TO 12.

Examiners,.....{REV. GEORGE CORNISH, LL.D.
{REV. GEORGE WEIR, LL.D.

1. Translate:—

(A)

Versæ inde ad Tiberium preces. Et ille varie disserebat, de magnitudine imperii, sua modestia. Solam divi Augusti mentem *tantæ molis* capacem se in partem curarum ab illo vocatum *experiendo* didicisse quam arduum, quam subjectum fortunæ, regendi cuncta onus. Proinde in civitate tot *illustribus viris* subnixa non ad unum omnia deferrent: plures facilius munia rei publicæ sociatis laboribus exsecuturos. Plus in oratione tali dignitatis quam fidei erat; *Tiberio*que etiam in rebus quas non *occuleret*, seu natura sive adsuetudine, suspensa semper et obscura verba, tunc vero nitenti ut sensus suos penitus abderet, in incertum et ambiguum magis implicabantur. At patres, quibus unus metus si intellegere viderentur, in questus, lacrimas, vota *effundi*; ad deos, ad effigiem Augusti, ad genua ipsius manus tendere, cum *proferri* libellum recitarique jussit. Opes publicæ continebantur, quantum civium sociorumque in armis, quot classes, regna, provinciæ, tributa aut vectigalia, et necessitates ac largitiones. Quæ cuncta sua manu perscripserat Augustus, addideratque consilium coërcendi intra terminos imperii, *incertum* metu an per invidiam.

(B)

Non hic mihi primus erga populum Romanum fidei et constantiæ dies. Ex quo a divo Augusto civitate donatus sum, amicos inimicosque ex vestris utilitatibus delegi, neque odio patriæ, quippe proditores etiam iis quos anteponunt invisi sunt, verum quia Romanis Germanisque idem conducere et pacem quam bellum probabam. Ergo raptorem filiæ meæ, violatorem fœderis vestri, Arminium apud Varum, qui tum exercitui præsidebat, reum feci. Dilatus segnitia ducis, quia parum præsidii in legibus erat, ut me et Arminium et conscios vinciret flagitavi. Testis illa nox, mihi utinam potius novissima! Quæ secuta sunt, defleri magis quam defendi possunt. Ceterum et injeci catenas Arminio, et a factione ejus injectas perpessus sum. Atque ubi primum *tui* copia, vetera novis et quieta turbidis antehabeo; neque ob præmium, sed ut me perfidia exsolvam; simul genti Germanorum idoneus conciliator, si pœnitentiam quam perniciem maluerit. Pro juventa et errore filii veniam precor: filiam necessitate huc adductam fateor. Tuum erit consultare utrum prævaleat, quod ex Arminio concepit an quod ex me genita est.

2. (*a*) State the leading rules to be observed in changing *Direct* into *Indirect Discourse*. (*b*) In ext. (A) change "Solam *** exsecuturos" into

direct; and in ext. (B) "non mihi *** probabam" into *indirect discourse*. (You may abbreviate words that are not changed.)

3 (*a*) Show the grammatical construction of the words in Italics in the above extt. (*b*) Point out the locality of the events described in ext. (B). (*c*) Illa nox:—explain, giving the date. (*d*) Define the geographical situations of:—Planasia, Nauportus, Treveri, Vetera, Pandateria. Give modern names when you can.

4 (*a*) *Proximo Priore* anno:—is this a pleonasm? (*b*) Write short explanatory notes on the following:—(1) Jus virgarum. (2) Intercessit. (3) Pantomimorum. (4) Simulacra libertatis. (5) Proconsulari imperio. (6) Triumphalia insignia. (7) Caligulam. (8) Vallum, agger, pila.

5. Translate:—

(C)

Stemmata quid faciunt? quid prodest, Pontice, longo
sanguine censeri, pictosque ostendere vultus
maiorum, et stantes in curribus Aemilianos,
et Curios iam dimidios, humerosque minorem
Corvinum, et Galbam auriculis nasoque carentem?
Quis fructus generis *tabula* iactare *capaci*
Corvinum, posthac *multa contingere virga*
famosos Equitum cum Dictatore magistros,
si coram Lepidis male vivitur? Effigies quo
tot bellatorum, si luditur *alea pernox*
ante Numantinos; si dormire incipis ortu
Luciferi, quo signa duces et castra movebant?
Cur Allobrogicis et *magna* gaudeat *ara*
natus in Herculeo Fabius lare, si cupidus, si
vanus et *Eguanea* quantumvis mollior *agna?*
si tenerum adtritus Catinensi pumice lumbum
squalentes producit avos, emtorque veneni
frangenda miseram funestat *imagine* gentem?
Tota licet veteres exornent undique cerae
atria, nobilitas sola est atque unica virtus.

(D)

Expende Hannibalem; quot libras in duce summo
Invenies? hic est quem non capit Africa Mauro
Percussa Oceano Niloque admota tepenti,
Rursus ad Æthiopum populos altosque elephantos.
Additur imperiis Hispania: Pyrenæum
Transilit. Opposuit natura Alpemque nivemque:
Diducit scopulos et montem rumpit aceto.
Jam tenet Italiam: tamen ultra pergere tendit:

Actum, inquit nihil est, nisi Pœno milite portas
Frangimus et media vexillum pono Suburra.
O qualis facies et quali digna tabella,
Quum Gætula ducem portaret bellua luscum !
Exitus ergo quis est ? O gloria ! vincitur idem
Nempe et in exsilium præceps fugit, atque ibi magnus
Mirandusque cliens sedet ad prætoria regis,
Donec Bithyno libeat vigilare tyranno.
Finem animæ, quæ res humanas miscuit olim,
Non gladii, non saxa dabunt, nec tela ; sed ille
Cannarum vindex et tanti sanguinis ultor,
Annulus.

6. (*a*) Give an account of Hannibal, and explain the allusions of ext. (D), pointing out what is exaggerated or legendary in them. (*b*) Explain what is meant by the words in Italics of ext. (C). (*c*) Point out various readings in the same ext.

7. (*a*) Give the derivation and meaning of the following words :—Sarrana, sportula, nanum, naulum, induperator, tomacula, luscum, auspex, pompa, stigmate, aplustre, vernula. (*b*) Parse the following :—impacta, mendicatus, haesuri, extorta, perit, avexerint, procubuisse, suspenderit, exegit, affixa.

8. (*a*) Name the subjects of Sat. VIII. and X., severally, and enumerate the leading historical references of the latter. (*b*) A short description of the style of Tacitus. (*c*) During the reigns of what emperors did he live ?

B.A. ORDINARY EXAMINATION.

LATIN PROSE COMPOSITION.

THURSDAY, APRIL 14TH :—AFTERNOON, 2 TO 4.

Examiners,..... { REV. GEORGE CORNISH, LL.D.
REV. GEORGE WEIR, LL.D.

Translate into Latin :—

(A) Minerva, who during the whole of the Trojan war is said to have been friendly to the Greeks, and to have always exhorted them not to give up the enterprise till either Helen was restored to her own prince or the enemy's city was destroyed, having descended from the lofty sky and seen Diomede, whom she favoured more than any other of the whole nation, standing idle, and complaining that he was wounded by Pandarus and could not get the assistance that he stood in need of, touched the sorrowful hero with her huge spear, but so as not to hurt him, and used the fol-

lowing words:—"You, whom I am daily advising to fight, whom I supply with more than human strength, and who are yet so easily frightened, deserve not to be called the son of Tydeus."

(B) When the Athenians in the war with the Lacedemonians received many defeats both by sea and land, they sent a message to the oracle of Jupiter Ammon, to ask the reason why they who erected so many temples to the gods, and adorned them with such costly offerings; why they who had instituted so many festivals, and accompanied them with such pomps and ceremonies; in short, why they who had slain so many hecatombs at their altars, should be less successful than the Lacedemonians, who fell so short of them in these particulars. To this the oracle made the following reply: "I am better pleased with the prayers of the Lacedemonians than with all the oblations of the Greeks."

THIRD YEAR EXAMINATION FOR HONOURS IN CLASSICS.

GREEK.

THURSDAY, APRIL 14TH:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate the following extracts, adding an explanatory note where you deem it necessary:—

(A) Hesiod, Works and Days:—(*a*) vss. 155-171. (*b*) vss. 693-703.

2. (*a*) What is the Aeolic Digamma? Point out any traces of it in the above extt. (*b*) Comment on the following forms, and give Attic equivalents of such as are not Attic:—*τέτορ', ἀρίζηλον, ἔκητι, ἀέξει, ἄφενον, ἐθελημοί, ἐναλίγκιον, ἄπλητοι, ἐκπάγλους, ἄρειον, πολιοκρόταφοι, ἀπηύρα, κοθούροις, μέταζε, τετράτρυφον, ὀκτάβλωμον.* (*c*) Give the exact meaning of the title *Ἔργα καὶ Ἡμέραι*, and give an epitome of the poem. (*d*) When and where did Hesiod live? Cite personal references in this poem.

3. Translate:—

(B) Aristophanes, The Frogs:—(*a*) vss. 354-371. (*b*) vss. 1482-1499.

4. (*a*) Name and give the scheme of the metres used severally in the above extt., and scan the first four vss. of each. (*b*) Note the personal and political references of ext. (*a*). (*c*) What was the ground of Aristophanes' antipathy to Euripides. (*d*) Enumerate the extant dramas of Aristophanes, and give the date of the Frogs.

5. (*a*) What is the Parabasis? Describe its different parts. Is the Parabasis of the Frogs complete. (*b*) Explain the following:—(1) τὴν περὶ τῶν κρεῶν. (2) Φρυνίχου παλαίσμασιν. (3) οὐ Χῖος ἀλλὰ Κεῖος. (4) υἱος Σταμνίου. (5) ἀναγιγνώσκοντί μοι τῆν' Ἀνδρομέδαν. (6) ἀναπαύλας, ἐκτροπάς (express in Latin). (7) Διὸς Κόρινθος. (8) Θρηκία χελιδών. (9) Κιμωλίας γῆς. (10) Μαμμάκυθοι.

6. Into what periods is Attic Comedy divided? Give the leading names of each period.

7. Translate:—

(C) Herodotus, Book VIII., Chaps. 98 and 99.

8 (*a*) ἀγγαρήϊον:—Illustrate from the New Test. (*b*) Translate and explain the following:—(1) ὡς ποδῶν ἕκαστος εἶχον (IX., 59). (2) καὶ σφι Ὑακίνθια ἦν (ib. 6). (3) Ἴωνας οὐδεμίαν ἐλπίδα εἶχον χαίροντας πρὸς τῶν Περσέων ἀπαλλάξειν (ib. 106). (4) ἰοῦσι δέ σφε φήμη τε ἐσέπτατο ἐς τὸ στρατόπεδον πᾶν, καὶ κηρυκήϊον ἐφάνη ἐπὶ τῆς κυματωγῆς κείμενον (ib. 100). (5) ὑπὸ τοῦτον μὲν δὴ τὸν στρατὸν ἐβουλεύσαντο καταφυγόντες οἱ του ναυτικοῦ στρατηγοὶ ἀνειρύσαι τὰς νέας, καὶ περιβαλέσθαι ἕρκος, ἕρυμα τῶν νεῶν κα σφέων αὐτῶν κρησφύγετον (ib. 97). (6) ἐς ὃ κατέβαινον συλλυπεύμενοι τῷ πάθεϊ (ib. 94).

9. Translate:—

D) Xenophon, Hellenics, Book II., Chap. 3 §§ 51-53, inclusive.

10. Write explanatory notes on the following from Book I.:—(*a*) μετ' ὀλίγον δὲ τούτων,—explain the Genitive. (*b*) ἡμεροσκόπος. (*c*) ἀνεβίβαζε. (*d*) ὡς ἤνοιγε. (*e*) συμφράξαντες τὰς ναῦς καὶ παραταξάμενοι. (*f*) ἐπιστολέως. (*g*) τὰ καλά—κἄλα. (*h*) ἐπιβάτης. (*i*) Distinguish between τεοίπλους and διέκπλους ἐμβολὴ and ἔμβολος.

LATIN.

FRIDAY, APRIL 22ND:—AFTERNOON, 2 TO 5.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate, adding an explanatory note where you deem it necessary, the following passages:—

(A) Juvenal, Sat. VIII., vss. 245-258; and X., vss. 114-126.

2. (*a*) Explain briefly the historical references in the above extt. from Juvenal, and give the name and date of the battle referred to in VIII., 249-52. (*b*) Discuss the construction and interpretation of the following:—(1)

Ingenio manus est et cervix caesa. (2) *Longo sanguine* censeri. (3) Effigies *quo* tot bellatorum? (4) Tamquam feceris ipse * * * *ut* te conciperet (VIII., vss. 40-42). (5) Viribus ille Confisus periit admirandusque lacertis (X., vss. 10-11). (*c*) Describe the subjects of Satt. VIII. and X., and refer to any passages that betray partiality, or mere declamatory exaggeration, on the part of Juvenal.

3. Translate:—

(B) Plautus, Anlularia, Act III., sc. 5, vss. 31-61.

4. (*a*) In ext. (B) point out what words are (1) purely Greek, and (2) derived from Greek. (*b*) "Putatur ratio;" "disputast ratio:"—explain, and give the Greek for this. Also explain the following:—Vestitu et creta; sublevit os; foris crepuit; adii manum; sycophantias; laterna Punica; Gallicis cantheriis; trifurcifer. (*c*) Write down the scheme of the Iambic and Trochaic metres as used by Plautus, and point out any peculiarities as compared with these metres in Aristophanes.

5. Give an account of the origin and development of *Satire* as a department of Literature among the Roman writers. Derive and give the literal meaning of the work *Satira*.

6. Translate:—

(C) Tacitus, Annals, Book II., chap. 71.

6. (*a*) In ext. (C) construe parentibus, liberis, patriae." (*b*) "Patri ac fratri":—Give their names. (*c*) "Numerate *sex liberos*:—Name any of these that afterwards became famous. (*d*) Illustrate from ext. (C) peculiarities of the style of Tacitus. (*e*) Derive and explain the term *Historiae*.

7. Translate:—

(D) Livy, Book XXII., chap. 2

8. (*a*) In ext. (D) construe "placandis Romae dis habendoque dilectu," and note any peculiarity of case-formation. (*b*) "Ipse aeger oculis, etc:" —Cite Juvenal on this passage. (*c*) Give the date of the events with which book XXII. opens, and a short account of the events preceding it. (*d*) Write explanatory notes on the following:—(1) Quum de republica retulisset. (2) Mavors. (3) Per principes; antesignani. (4) Fatalibus libris. (5) Duellis, clepsit, faxitur. (6) Aetas militaris. (7) Prorogato imperio. (8) In sententiam pedibus issent. (9) Praerogativam militarem. (10) Ver novum.

GREEK AND ROMAN HISTORY.

THURSDAY, APRIL 14TH:—AFTERNOON, 2 TO 5.

Examiner,.....REV. GEORGE CORNISH, L L.D.

1. (*a*) The legend of Deukalion, Hellen, and the sons of Hellen. (*b*) Give the substance of Grote's remarks on Grecian Mythology. (*c*) What was the original meaning of the word *mythus?*

2. (*a*) Distinguish between the character and objects of Greek and Roman colonization. (*b*) Enumerate the Western colonies of Greece. (*c*) Distinguish between the *Phocenses* and the *Phocæënses*.

3. An account of the legislation of (1) Lycurgus; (2) Solon; (3) Cleisthenes.

4. What were the leading States of Greece at the time of the Persian war, and what parts did they severally take?

5. Describe, either by a map or by words, the physical features and ancient political divisions of Italy.

6. The constitution and functions of the Comitia, (*a*) *Curiata*, (*b*) *Centuriata*, and (*c*) *Tributa*, severally, under the Republic.

7. How was the Senate constituted, and what part did it take in the administration of the State?

8. Enumerate the laws passed between 500 and 300, B.C., by which the Plebeians secured political equality with the Patricians.

9. Give an historical sketch of the Samnites. What peoples of Italy combined with them in their resistance to the Romans?

10. What were the great powers of the civilized world at the time of the second Punic War?

11. Give, with dates, an account of the reduction to the condition of Roman provinces of Sicily, Sardinia, Spain, Africa, Macedonia.

GREEK AND LATIN PROSE COMPOSITION.

MONDAY, APRIL 25TH:—AFTERNOON, 2 TO 5.

Examiner,..... REV. GEORGE CORNISH, LL.D.

(A) Translate into Greek:—

Whilst Xenophon was performing the customary sacrifice, he received the intelligence that the elder of his two sons, named Gryllus, had fallen in

the battle at Mantinea. He did not, however, consider this a sufficient reason for omitting the appointed worship of the gods, but deemed it sufficient to lay aside his sacrificial crown. He then inquired how he had met his death; and was told that he had fallen whilst fighting with the utmost bravery. He, therefore, replaced the crown upon his head, calling the gods to whom he was sacrificing to witness that the pleasure he received at the valour of his son exceeded the grief occasioned by his death.

(B) Translate into Latin:—

The Romans, seeing from the citadel the city full of the enemy, and some new disaster continually arising on every side, were unable not only to realize it, but even to command their senses. Wherever the shouts of the foe, the lamentations of women and children, the crackling of fire, and the crash of falling roofs called their attention, terrified at every sound, they turned their thoughts, faces, and eyes, as if stationed by fortune to be spectators of the ruin of their country, and left to protect no part of their property, except their own persons; and so much the more to be pitied than others that have ever been besieged, inasmuch as they were at once invested and shut out from their country, beholding all their effects in the power of their enemies. Nor was the night which succeeded a day so miserably spent more tranquil; daylight then followed a restless night, nor was there any moment which was free from the spectacle of some ever new disaster. Nevertheless, burdened and overwhelmed by so many evils, they abated not their courage; determined, although they had beheld all things levelled by conflagration and ruin, to defend by their valour the hill which they occupied, ill-provided and narrow as it was, yet the refuge of freedom. And at last, as the same things happened every day, they had abstracted their thoughts, as if inured to calamities, from all sense of their misfortunes; gazing only upon their arms, and the swords in their hands, as the sole remnants of their hopes.

B. A. EXAMINATION FOR HONOURS IN CLASSICS.

GREEK PROSE WRITERS.

MONDAY, APRIL 4TH:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate adding an explanatory note where you deem it necessary:—

(A) Herodotus, Book VIII., Chaps. 98 and 99.

2. (*a*) ἀγγαρήϊον:—Illustrate from the New Test. (*b*) Translate and explain the following:—(1) ὡς ποδῶν ἕκαστος εἶχον (IX., 59). (2) καί

σφι Ὑακίνθια ἦν (ib. 6). (3) Ἴωνας οὐδεμίαν ἐλπίδα εἶχον χαίροντας πρὸς τῶν Περσέων ἀπαλλάξειν (ib. 106). (4) ἰοῦσι δέ σφε φήμη τε ἐσέπτατο ἐς τὸ στρατόπεδον πᾶν, καὶ κηρυκήϊον ἐφάνη ἐπὶ τῆς κυματωγῆς κείμενον (ib. 100). (5) ὑπὸ τοῦτον μὲν δὴ τὸν στρατὸν ἐβουλεύσαντο καταφυγόντες οἱ τοῦ ναυτικοῦ στρατηγοὶ ἀνειρύσαι τὰς νέας, καὶ περιβαλέσθαι ἕρκος, ἔρυμα τῶν νεῶν καὶ σφέων αὐτῶν κρησφύγετον (ib. 97). (6) ἐς ὃ κατέβαινον συλλυπεύμενοιτῷ πάθεϊ (ib. 94).

3. (B) Translate, Thucydides, Book VI., Chap. 34, down to κατ' ὀλίγον προσπίπτουσα.

4. (*a*) διὰ φόβου εἰσί:—Comment on and illustrate this use of διά. Explain the force of ἐς in ἀναστῆσαι Ἀθηναίοις ἐς Τάραντα, and also περὶ in περὶ τῇ Σικελίᾳ ἢ τοῦ ἐκείνους περαιωθῆναι. (*b*) Translate, and explain the syntax of the following passages in Book VII.:—(1) ἐφθασαν παροικοδομήσαντες, καὶ παρελθόντες τὴν τῶν Ἀθηναίων οἰκοδομίαν, ὥστε μηκέτι μήτε αὐτοὶ κωλύεσθαι ὑπ' αὐτῶν. (c. 6). (2) ἢ τῷ ὄχλῳ πρὸς χάριν τι λέγοντες. (c. 8). (3) τοῖς τε γὰρ ἐπιχειρήμασιν ἑώρων οὐ κατορθοῦντες, καὶ τοὺς στρατιώτας ἀχθομένους τῇ μονῇ. (c. 47). (4) παύσαντες τὴν φλόγα, καὶ τὸ μὴ προσελθεῖν ἐγγὺς τὴν ὀλκάδα. (c. 53). (5) νομίζων οὐ τὸ ὑπομένειν ἐν τῷ τοιούτῳ ἑκόντας εἶναι, καὶ μάχεσθαι, σπτηρίαν. (c. 81). (*c*) Distinguish between:—Σακανοί, Σικελοί, and Σικελιῶται, and name the Grecian colonies in Sicily.

5. (C) Translate, Xenophon, Hellenics, Book II., Chap. 3, §§ 51–53, inclusive.

6. Write explanatory notes on the following from Book I.:—(*a*) μετ' ὀλίγον δὲ τούτων,—explain the Genitive. (*b*) ἡμεροσκόπος. (*c*) ἀνεβίβαζε. (*d*) ὡς ἤνοιγε. (*e*) συμφράξαντες τὰς ναῦς καὶ παραταξάμενοι. (*f*) ἐπιστολέως. (*g*) τὰ καλά—κᾶλα. (*h*) ἐπιβάτης. (*i*) Distinguish between περίπλους and διέκπλους: ἐμβολὴ and ἔμβολος.

7. (D) Translate, Demosthenes, De Corona, page 260 (Ed Tauchitz):—Τίς γὰρ ὑμῶν * * μιαρῷ τούτῳ.

(E) Æschines, Contra Ctesiphontem, §§ 159–160 (Ed. Teubner.), inclusive.

8. (*a*) Ext. (E):—τὴν τάξιν ἔλιπεν. ἱερὰ ἱδρύσατο Παυσανίου. Μαργίτην.—Explain these references. (*b*) Translate and comment on the following from De Cor.:—(1) καὶ βοᾷς ῥητὰ καὶ ἄρρητα ὀνομάζων, ὥσπερ ἐξ ἀμάξης. (2) οὐ δ' ἐγὼ μὲν ἀθῶος ἅπασι, τοῖς νόμοις, τῷ χρόνῳ τῇ προσθεσμίᾳ. (3) πολλῶν προαιρέσιων οὐσῶν τῆς πολιτείας, τὴν περὶ τὰς Ἑλληνικὰς πράξεις εἱλόμην ἐγώ. (*c*) Distinguish between:—δίκη and γραφή.

νόμος ψήφισμα, and προβούλευμα. (*d*) At what dates were these orations respectively delivered, and with what result?

9. (F) Translate, Aristotle, De Poetica, (*a*) Chap. 8, down to τὴν Ἰλιάδα. (*b*) Chap. 10.

(*a*) What bearing has ext. (*a*) on the controversy as to the authorship, composition, &c., of the Homeric Poems? (*b*) Illustrate ext. *b*) by references to Greek tragedies. (*c*) Derive and explain the terms διθύραμβος, ἰαμβεῖον, ἐπεισόδιον.

11. Translate (G):—

Τὴν δὲ κολακείαν ὑπολάβοι ἂν τις ὁμιλίαν αἰσχρὰν εἶναι, συμφέρουσαν δὲ τῷ κολακεύοντι· τὸν δὲ κόλακα τοιοῦτόν τινα, ὥστε πορευόμενον ἅμα εἰπεῖν "Ἐνθυμῇ, ὡς ἀποβλέπουσι πρὸς σὲ οἱ ἄνθρωποι; τοῦτο οὐθενὶ τῶν ἐν τῇ πόλει γίνεται πλὴν σοί· εὐδοκίμεις χθὲς ἐν τῇ στοᾷ· πλειόνων γὰρ ἢ τριάκοντα ἀνθρώπων καθημένων, καὶ ἐμπεσόντος λόγου, τίς εἴη βέλτιστος, ἀπ' αὐτοῦ ἀρξαμένους πάντας ἐπὶ τὸ ὄνομα αὐτοῦ κατενεχθῆναι." καὶ ἄλλα τοιαῦτα λέγων ἀπὸ τοῦ ἱματίου ἀφελεῖν κροκίδα. Καὶ ἐάν τι πρὸς τὸ τρίχωμα τῆς κεφαλῆς ἀπὸ πνεύματος προσενεχθῇ ἄχυρον, καρφολογῆσαι, καὶ ἐπιγελάσας δὲ εἰπεῖν, "Ὁρᾷς; ὅτι δυεῖν σοι ἡμερῶν οὐκ ἐντετύχηκα, πολιῶν ἔσχηκας τὸν πώγωνα μεστόν· καίπερ, εἴ τις καὶ ἄλλος, ἔχεις πρὸς τὰ ἔτη μέλαιναν τὴν τρίχα." Καὶ λέγοντος αὐτοῦ τι, τοὺς ἄλλους σιωπᾷν κελεῦσαι· καὶ ἐπαινέσαι δὲ ἀκούοντος· καὶ ἐπισημήνασθαι δὲ, εἰ παύσεται, "Ὀρθῶς."

THEOPHRASTUS.

GREEK POETS.

FRIDAY, APRIL 22ND:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate with an explanatory note when you deem it necessary:—

(A) Aeschylus, Prometheus Vinctus, vss. 397–435.

(B) Aeschylus, Seven against Thebes, vss, 287–303.

2. (*a*) In ext. (A), parse οὐλομένας, λέλακε, μάχας. (*b*) Derive ἀμέγαρτα, δακρυσίστακτον, ἄτρεστοι, ἄρειον, αἰχμάν. (*c*) Give variants for λειβομένα, ὀχων στενάζει. (*d*) Comment on the geographical references.

3. (*a*) Analyse the metres of ext. (B). (*b*) κάρζας:—what dialect? (*c*) Give the meaning of the following epithets:—Ἑβδομαγέτης, Ἀλεξητήριος, Λύκειος, Ὄγκα, Νησισταισι, Χάλυβος. (*d*) Narrate the leading

points in the legend of Oedipus and his family. To what extent is the plot of the Antigone suggested by Aeschylus in this play ?

4. Translate :—

(C) Sophocles, Antigone, vss. 998–1022.

(D) Euripides, Hippolytus, vss. 311–331.

5. (*a*) Note and comment on the words *βεβαρωμένῳ, θᾶκον, ἐγευόμην, ἀγνῶτ', εὐσήμους, μηροί.* (*b*) Construe *καλυπτῆς πιμελῆς.* (*c*) Give the subjects of the choral parts of this drama, and show their connection with the main plot.

6. Translate :—

(E) Hesiod, Works and Days :—(*a*) vss. 155–171. (*b*) vss. 693–703.

7. (*a*) What is the Aeolic Digamma ? Point out any traces of it in the above extt. (*b*) Comment on the following forms, and give Attic equivalents of such as are not Attic :—*τέτορ', ἀρίζηλον, ἔκητι, ἄξει, ἄφενον, ἐθελημοί, ἐναλίγκιον, ἅπλητοι, ἐκπάγλους, πολιοκρόταφοι, ἀπηύρα, κοθούροις, μέταζε, τετράτρυφον, ὀκτάβλωμον.* (*c*) Give the exact meaning of the title *Ἔργα καὶ Ἡμέραι*, and give an epitome of the poem. (*d*) When and where did Hesiod live ? Cite personal references in this poem.

8. Translate :—

(F) Aristophanes, The Frogs :—(*a*) vss. 354–371. (*b*) vss. 1482–1499.

9. (*a*) Name and give the scheme of the metres used severally in the above extt., and scan the first four vss. of each. (*b*) Note the personal and political references of ext. (*a*). (*c*) What was the ground of Aristophanes' antipathy to Euripides? (*d*) Enumerate the extant dramas of Aristophanes. Give the date of the Frogs.

10. (*a*) What is the Parabasis ? Describe its different parts. Is the Parabasis of the Frogs complete ? (*b*) Explain the following :—(1) *τὴν περὶ τῶν κρεῶν.* (2) *Φρυνίχου παλαίσμασιν.* (3) *οὐ Χίος ἀλλὰ Κεῖος.* (4) *υἱὸς Σταμνίου.* (5) *ἀναγιγνώσκοντί μοι τῆν' Ἀνδρομέδαν.* (6) *ἀναπαύλας ἐκτροπάς* (express in Latin). (7) *Διὸς Κόρινθος.* (8) *Θρηκία χελιδών.* (9) *Κιμωλίας γῆς.* (10) *Μαμμάκυθοι.*

11. Translate :—

(G) Theocritus, Idyll I., vss. 95–114.

12. (*a*) Describe the dialect of Theocritus, and point out words peculiar to it in ext. (G), and give their equivalents in Attic. (*b*) Explain the words *εἰδύλλια* and *βουκολικά*. (*c*) To what period of Greek Literature did Theocritus belong?

13. Translate :—

(H) Pindar, Olymp. VII., vss. 1–35.

14. (*a*) Describe the custom referred to at the beginning of ext. (A), explaining the phrase *οἴκοθεν οἴκαδε*. (*b*) Derive and explain the words :—*καχλάζοισαν, κορυφάν, ζωθάλμιος, ἄποινα, ξυνόν, ἀκλάρωτον, χρυσάμπυκα, σκυτάλα*. (*c*) Describe the occasion of an Epinician Ode. (*d*) An account of Pindar and of his poetry.

LATIN PROSE WRITERS.

WEDNESDAY, APRIL 20TH :—MORNING, 9 TO 12.

Examiner,..... REV. GEORGE CORNISH, LL.D.

1. Translate the following extracts, adding a brief comment where any peculiar form or construction seems to you to require it :—

(A) Tacitus, Histories, Book I., chap. 84.

2. (*a*) Give the date with a summary of the events recorded in this Book of Tacitus. (*b*) "Istud pro me :"— supply the ellipsis. (*c*) "Non Hercule :"—explain this form. (*d*) "Depoposcerint; constiterint :"—explain these uses of the Subjunctive. (*e*) Distinguish as accurately as you can between :— *domibus ac tectis ; seditionem et discordiam ; sanguinem et caedem ; splendore et gloria ; sordes et obscuritatem*, as used in ext. (A.)

3. Translate :—

(B) Tacitus, Annals, Book II., chap. 71.

4. (*a*) In ext. (B) construe "parentibus liberis patriae." (*b*) "Patri ac fratri :"— give their names. (*c*) "Numerate *sex liberos* :—name any of these that afterwards became famous. (*d*) Illustrate from extt. (A) and (B) peculiarities of the style of Tacitus. (*e*) Derive and explain the term *Historiae*.

5. Translate :—

(C) Livy, Book XXII., chap. 2.

6. (*a*) In ext. (C) construe "placandis Romae dis habendoque dilectu," and note any peculiarity of case-formation. (*b*) "Ipse aeger oculis, etc :"—cite Juvenal on this passage. (*c*) Give the date of the events with which

book XXII. opens, and a short account of the events preceding it. (*d*) Write explanatory notes on the following :— (1) Quum de republica retulisset. (2) Mavors. (3) Per principes; antesignani. (4) Fatalibus libris. (5) Duellis, clepsit, faxitur. (6) Aetas militaris. (7) Prorogato imperio. (8) In sententiam pedibus issent. (9) Praerogativam militarem. (10) Ver novum.

7. Translate :—

(D) Cicero, De Imp. Cn. Pomp., chap. 2 ; §§ 4 and 5.

8. (*a*) *Honestissimis viris* :—explain the political, social, and commercial position and importance of the *Equites* as a class in the time of Cicero. (*b*) *Asiam* :—define the geography. (*c*) How did Pompey requite the efforts put forth by Cicero in his behalf? Can you cite from Cicero's letters any remarks on this point ?

9. Translate :—

(E) Cicero, De Officiis, Book II., chap. 9 ; §§ 32—34, inclusive.

10. What systems of philosophy did Cicero follow at different periods of his life ? Define the main object and scope of the De Officiis.

11. Translate :—

(F) Cerebrum omnia habent animalia, quae sanguinem : etiam in mari quae mollia appellavimus, quamvis careant sanguine, ut polypi. Sed homo portione maximum et humidissimum, omniumque viscerum frigidissimum, duabus supra subterque membranis velatum, quarum alterutram rumpi mortiferum est. Cetero viri quam feminae maius. Hominibus hoc sine sanguine, sine venis, et reliquis sine pingui. Aliud esse, quam medullam, eruditi docent, quoniam coquendo durescat. Omnium cerebro insunt ossicula parva. Uni homini in infantia palpitat, nec corroboratur ante primum sermonis exordium. Hoc est viscerum excelsissimum, proximum caelo capitis, sine carne, sine cruore, sine sordibus. Hanc habent sensus arcem : huc venarum omnis a corde vis tendit, hic desinit : hic culmen altissimum, hic mentis est regimen. Omnium autem animalium in priora pronum, quia et sensus ante nos tendunt. Ab eo proficiscitur somnus : hinc capitis nutatio. Quae cerebrum non habent, non domiunt. Cervis in capite inesse vermiculi sub linguæ inanitate, et circa articulum, qua caput iungitur, numero viginti produntur.

PLINY.

LATIN POETS.

MONDAY, APRIL 25TH :—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D

1. Translate, adding an explanatory note where you may deem it necessary on any peculiar form or construction :—

(A) Persius, Sat. V., vss. 132--152.

2. (*a*) Translate and explain the following extracts, noting any varieties either of reading or interpretation :—(1) Vulnera Parthi ducentis ab inguine ferrum. (2) Saepe insulso cœnanda Glyconi. (3) Hortante Camena. (4) Succinctis Laribus. (5) Tota impune Suburra Permisit sparsisse oculos jam candidus umbo. (6) Fruge Cleanthea. (7) Libertate opus est * * * far Possidet (vss. 73--75). (8) Una Quiritem Vertigo facit. (*b*) Derive the following and give their meaning:—Catasta, rugam, popa, fenoris, esseda, bruma, varicosos, varo, Dama, equidem. (*c*) Cite instances wherein Persius has imitated Horace. (*d*) How would you account for the obscurity and other peculiarities of the style of Persius ?

3. Translate :—

(B) Juvenal, Sat. VIII., vss. 245–258 ; and X., vss. 273–288.

4. (*a*) Explain briefly the historical references in the above extt. from Juvenal, and give the name and date of the battle referred to in VIII., 349–52. (*b*) Discuss the construction and interpretation of the following :—(1) *Ingenio* manus est et cervix caesa. (2) *Longo sanguine* censeri. (3) Effigies *quo* tot bellatorum ? (4) Tamquam feceris ipse * * * *ut* te conciperet. (5) Viribus ille Confisus periit admirandusque lacertis. Point out where Juvenal in these Satires has written with a bias in favour of his own country, which led him into unfair exaggeration.

5. Translate :—

(C) Horace, Satt., Book I., Sat. 10, vss. 15–39.

(D) Horace, Epp., Book I., Ep. 16, vss. 46–62.

6. (*a*) In ext. (C), construe and explain the meaning of *Seri studiorum ; Canusini more bilinguis ; Judice Tarpa.* (*b*) In ext. (D) show the syntax and usage of *fabae, frugi, mihi,* and *justo sanctoque.* (*c*) *Sabellus :*—to whom is the reference. (*d*) *Laverna :*—give the etymology.

7. Give an account of the origin and development of satire as a department of Literature among the Romans. Derive, and give the literal meaning of the word *Satira.*

8. Translate :—

(E) Plautus, Aulularia, Act III., Sc. 5, vss. 31–61.

9. (*a*) In ext. (E) point out what words are (1) purely Greek, and (2) derived from Greek. (*b*) "Putatur ratio ;" "disputatast ratio :"—explain, and give the Greek for this. Also explain the following :—Vestitu et creta ; sublevit os ; foris crepuit ; adii manum ; sycophantias ; laterna Punica ; Gallicis cantheriis ; trifurcifer. (*c*) Write down the scheme of the Iambic and Trochaic metres as used by Plautus, and point out any peculiarities as compared with these metres in Aristophanes.

10. Translate :—

(F) Terence, Adelphi, Act iv., Sc. 7, vss. 28-44.

11. (*a*) Which is the correct form, Aedepol or Edepol? Also explain the forms :—*satur, sis, dis, quor, prorsus.* (*b*) Construe and explain the following formulæ :—(1) Ut te magnus perdat Juppiter. (2) Pro divom fidem. (3) Ita me di ament ut video tuam ineptiam. (4) O Juppiter, hancine vitam.

12. Point out the chief points of difference as regards style and originality between Plautus and Terence.

13. Translate :—

(G) Virgil, Aeneid, Book I., vss. 254-274.

14. Enumerate the minor works ascribed to Virgil.

GREEK PROSE COMPOSITION.

MONDAY, APRIL 4TH :—AFTERNOON, 2 TO 5.

Examiner, ... REV. GEORGE CORNISH, LL.D.

Translate into Greek (accented) :—

The Iliad means the Poem of Ilion or Troy, a city of Mysia in the north-west of Asia Minor. The subject of the poem is one chapter of events in the ten years' siege of Troy by the Greeks. Paris, son of Priam, King of Troy, had carried off Helen, the fairest of women, wife of Menelaus, King of Sparta. Helen had been wooed by many suitors, and her father Lydeus had bound them all by oath to join in avenging that man whom she should marry, if she were taken from him by force. So Agamemnon, King of Mycenæ, called together these suitors and other chieftains from all parts of Greece, and they sailed with many ships to besiege Troy. For ten years they besieged it in vain, though the Trojans dared not come out and fight pitched battles; for there was a hero in the Greek army so terrible that not even Hector, the greatest of the Trojan warriors, could stand before him. This hero was Achilles, whom the sea-goddess Thetis had borne to Peleus, King of Phthiôtis, in Thessaly. But at last, in the tenth year of the siege, Achilles suffered a grievous affront from the King Agamemnon, who took away from him his prize, the captive damsel Briseis. Then Achilles was angry and said that he would fight for the Greeks no more, and withdrew from the army to his tent by the sea-shore.

LATIN PROSE COMPOSITION.

WEDNESDAY, APRIL 20TH :—AFTERNOON, 2 TO 5.

Examiner,.....REV. GEORGE CORNISH, LL.D.

Translate into Latin :—

The houses were full of dying women and children, the streets with old men gasping out their last breath. The bodies remained unburied, for either the emaciated relatives had not strength for the melancholy duty, or in the uncertainty of their own lives neglected every office of kindness or charity. Some, indeed, died in the act of burying their friends; others crept into the cemeteries, lay down on a bier, and expired. There was no sorrow, no wailing; they had not strength to moan; they sate with dry eyes and mouths drawn up into a kind of bitter smile. Those who were more hardy looked with envy on those who had already breathed their last. Many died, says the historian, with their eyes steadily fixed on the Temple. There was a deep and heavy silence over the whole city, broken only by the robbers as they forced open houses to plunder the dead, and in licentious sport dragged away the last decent covering from their bodies; they would even try the edge of their swords on the dead. The soldiers, dreading the stench of the bodies, at first ordered them to be buried at the expense of the public treasury; as they grew more numerous, they were thrown over the walls into the ravines below.

HISTORY OF GREECE AND ROME.

FRIDAY, APRIL 22ND :—AFTERNOON, 2 TO 5.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Into what periods may the history of Greece be divided?

2. Describe the relations of Greek and Roman Colonies, respectively, to the parent-state.

3. Compare the leading features, and the general influence upon Grecian affairs, of the Athenian, Spartan, and Theban Supremacies, severally.

4. An account of the personal character and political influence of Alcibiades.

5. Grote's estimate of the character and work of the Sophists.

6. Comment on the growth and constitution of the Confederacy of Delos.

7. Indicate, giving dates, the successive steps of the progress of Philip to the supreme power in the affairs of Greece.

8. Trace the changes that took place in the constitution of Rome from the time of the Expulsion of the Kings to that of the first Punic War.

9. Give an account of the Licinian Laws.

10. An account of the growth of the dominion of Rome during, and in consequence of, the Punic Wars.

11. When did Pyrrhus invade Italy, and under what pretext? In what part of Italy did he wage war with the Romans, and what was the result of the war?

12. Give Mommsen's estimate of the character, personal and political, of Cæsar and Cicero. And state what were the leading principles of the policy of each.

13. To what causes may the victory of Greece over Persia, and of Rome over Carthage, be severally assigned?

14. What were the qualifications required for the enjoyment and exercise of the rights of citizenship at Athens previous to the time of Pericles, and at Rome under the Republic?

15. Give the ancient names of the following:—Palermo, Santa Maura, Navarino, Crimea, Cape Matapan, Treves, Piacenza, Lyons, Elbe, York Stamboul.

GENERAL PAPER.

MONDAY, APRIL 25TH:—AFTERNOON, 2 TO 5.

Examiner.....REV. GEORGE CORNISH, LL.D.

1. What was the original seat of the Aryan race? Name the principal languages of the Aryan family. How is Sanscrit related to Greek and Latin? With what Greek dialect is Latin most closely connected?

2. (*a*) Enumerate the Dialects of the Greek Language, and point out their leading characteristics and the districts where they severally prevailed. (*b*) To what causes may the origin of these dialects be ascribed? (*c*) Give the Future, Attic and Ionic, of σημαίνω, καλέω, χαρίζομαι, σκεδάζω and μένω.

3. What changes did the Attic dialect undergo, and who were the leading writers in each?

4. The principal uses of the Greek Article.

5. Give lists (1) of Greek words borrowed by the Latins with a change of form; and (2) of Greek words adopted by the Latins without change of form.

6. Compare, in regard to their etymology, the following English words with the cognate words in Greek and Latin:—*brother, goose, acre, door, tame, wit, sit, chin, fist, heart.*

7. Mention traces of lost cases in Greek and Latin.

8. How does Mommsen, by a comparison of words common to Greek and Latin, determine the character of the civilization of the Graeco-Italians before their separation?

9. The Homeric Poems;—their origin and preservation.

10. What changes in the construction and representation of Attic tragedies are ascribed to Aeschylus, Sophocles, and Euripides, severally?

11. Give Donaldson's classification of Greek plays, with the substance of his remarks on the origin of Comedy and Tragedy among the Greeks. Give also the etymology of the terms *τραγῳδία* and *κωμῳδία*.

12. In what departments of literature did Latin writers most closely follow Greek models, and in what did they show the greatest originality?

ORDINARY MATHEMATICS AND NATURAL PHILOSOPHY.

FIRST YEAR.

EUCLID—ARITHMETIC.

THURSDAY, APRIL 14TH:—MORNING, 9 TO 12.

Examiners, ... { ALEXANDER JOHNSON, LL.D.
G. H. CHANDLER, M.A.

1. Find a mean proportional between two given straight lines.

2. Define duplicate ratio: and prove that the duplicate ratio of two lines is the same as the ratio of the squares of the lines.

3. Equiangular parallelograms have to one another the ratio which is compounded of the ratios of their sides.

4. The opposite angles of a quadrilateral inscribed in a circle are together equal to two right angles.

a. *A B C D* is a quadrilateral inscribed in a circle, and the sides *A B*, *C D*, when produced, meet at *O*, show that the triangles *A O C*, *B O D* are equiangular.

5. Find a fourth proportional to $1\frac{3}{5}$, $5\frac{7}{8}$ and .001.

6. How much per cent. is 13 of 63.

7. The opposite sides and angles of a parallelogram are equal to one another, and either of the diagonals bisects the parallelogram.

a. The diagonals also bisect each other.

8. The straight line drawn at right angles to the diameter of a circle from the extremity of it, falls without the circle; and no straight line can be drawn from the extremity, between that straight line and the circumference, so as not to cut the circle.

9. Describe an equilateral and equiangular pentagon about a given circle.

10. If two triangles have one angle of the one equal to one angle of the other, and the sides about two other angles proportionals, under what circumstances are the triangles *similar?* Give the proof for each case.

11. Reduce 4s. 3½d. to the decimal of a crown, and to the fraction of a Napoleon of 20 francs: the crown being ¼th and the franc $\frac{1}{25}$th of £1.

12. Multiply 73.47 by .0063, and divide the result by 17.2345.

FIRST YEAR.

TRIGONOMETRY—ALGEBRA.

WEDNESDAY, APRIL 20TH :—MORNING, 9 TO 12.

Examiners,..... { ALEXANDER JOHNSON, LL.D
G. H. CHANDLER, M.A.

1. In a circle whose radius is 6 feet long, a perpendicular let fall from one end of an arc on a diameter drawn through the other end is 4 feet long find the tangent of the angle subtended by the arc.

2. Prove that the cosine of an angle is equal to the cosine of its supplement but with an opposite sign.

3. Prove

$$Cos\ A + Cos\ B = 2\ Cos\ \tfrac{1}{2}\ (A + B)\ Cos\ \tfrac{1}{2}\ (A - B).$$

4. Resolve $a^3\ x^2 - 3\ a^3\ x + 2\ a^4$ into elementary factors.

5. Find the least common multiple of $6\ (x^2\ y + x\ y^2)$, $9\ (x^3\ y - x\ y^2)$, $4\ (y^3 + x\ y^2)$.

6. A and B can reap a field together in 12 hours, A and C in 16 hours and A by himself in 20 hours, in what time could A, B, and C together reap it?

7. Prove that

(*a*) $2\ versin\ A - versin^2\ A = sin^2\ A$,

(*b*) $(cos^2\ A - 1)\ (cot^2\ A + 1) = -1$,

(*c*) $(cosec\ A - cot\ A)^2 = \dfrac{1 - cos\ A}{1 + cos\ A}$

8. In any triangle

$$\frac{Sin\ A}{a} = \frac{Sin\ B}{b} = \frac{Sin\ C}{c}.$$

9. Find the sine and cosine of 18°.

10. Reduce the following fractions to their lowest terms :

$$\frac{10\ a^2\ x}{5\ a^2\ x - 15\ ay^2}, \quad \frac{x^3 - 3\ a^2\ x + 2\ a^3}{2\ x^3 + ax^2 + a^2\ x - 4\ a^3}$$

11. Solve the following equations :

(*a*) $\dfrac{3\ x - 3}{4} - \dfrac{3\ x - 4}{3} = \dfrac{21 - 4\ x}{9}$

(*b*) $\frac{3}{4}\ (x^2 - 3) = \frac{1}{8}\ (x - 3)$

(*c*) $\sqrt{x + 3} + \sqrt{3\ x - 3} = 10.$

12. Find the circular measure of the angle of a regular polygon of n sides.

INTERMEDIATE EXAMINATION.

EUCLID—ARITHMETIC.

FRIDAY, APRIL 8TH:—MORNING, 9 TO 12.

Examiners,..... { ALEXANDER JOHNSON, LL.D.
REV. A. N. MCQUARRIE, B.A.
GEORGE H. CHANDLER, M.A.

1. Find a third proportional to two given straight lines.

2. Divide a given straight line into two parts, so that the rectangle contained by the whole and one of the parts shall be equal to the square on the other part. Give both the geometrical and algebraical solutions.

3. The straight lines bisecting any angle of a quadrilateral inscribed in a circle and the opposite exterior angle meet in the circumference of the circle.

4. Find to three places of decimals the numerical value of $\dfrac{\sqrt{5} - 1}{4}$.

5. If the ratio of the weights of equal volumes of ice and water be as

.918 to 1, and a cubic inch of water weigh 252.5 grains, find the weight of a cubic foot of ice.

6. If from a point without a circle two straight lines be drawn, one of which cuts the circle, and the other touches it; the rectangle contained by the whole line which cuts the circle and the part of it without the circle shall be equal to the square on the line which touches it.

7. In any right-angled triangle, any rectilineal figure described on the side subtending the right angle, is equal to the sum of the similar and similarly described figures on the sides containing the right angle.

(*a*) What is the meaning of "similarly described?"

8. Gunpowder being composed of 75 per cent. of nitre, 12.5 of charcoal, and 12.5 of sulphur, how much of each of these substances is there in 5 tons of powder?

9. Supposing the rates of marching of two columns of infantry to be as 4 to 3, and one to be three miles in advance of the other, and marching at the rate of $2\frac{1}{2}$ miles per hour; at what time will the column in the rear overtake the other?

10. If a straight line be divided into any two parts, the squares on the whole line and on one of the parts are equal to twice the rectangle contained by the whole and that part, together with the square on the other part.

a. Give the algebraical proof.

11. The sides about the equal angles of equiangular triangles are proportionals; and those sides which are opposite to the equal angles are homologous.

12. Reduce 2 roods, 7 sq. perches, 4 sq. yds., 3 sq. ft., 117 sq. inches to the decimal of 7 acres.

13. Find the time in which \$270 will give \$87 interest at 7 per cent.

INTERMEDIATE EXAMINATION.

TRIGONOMETRY—ALGEBRA.

MONDAY, APRIL 11th :– MORNING, 9 to 12.

Examiners, ... { ALEXANDER JOHNSON, LL.D. / REV. A. N. MCQUARRIE, B.A. / GEORGE H. CHANDLER M.A.

1. Prove $Sin\ \frac{1}{2} A = \sqrt{\frac{(s-b)(s-c)}{bc}}$

2. If A, B and C be the angles of a triangle prove

$$Cot\ A.\ cot\ B + cot\ A\ cot\ C + cot\ B\ cot\ C = 1$$

3. Solve the equations

$$a + x + \sqrt{a^2 + x^2} = b\ ;$$

$$\frac{3}{2} - \frac{x-2}{2} = \frac{2}{5} - \frac{4+x}{6}\ ;$$

$$a\,x + b\,y = c \qquad a_1\,x + b_1\,y = c_1$$

4. It is between 11 and 12 o'clock, and it is observed that the number of minute spaces between the hands is two-thirds of what it was ten minutes previously ; find the time.

5. Find the G. C. M. and L. C. M. of

$$x^3 - 3a^2\,x - 2a^3 \text{ and } x^3 - ax^2 - 4a^3.$$

6. Show that $$\frac{(xy^2)^{\frac{1}{3}} - (x^2\,y)^{\frac{1}{3}} + x}{x + y} = \frac{x^{\frac{1}{3}}}{x^{\frac{1}{3}} + y^{\frac{1}{3}}}$$

7. Prove that $$tan\,(A + B) = \frac{tan\,A + tan\,B}{1 - tan\,A\,tan\,B}\ ,$$

$$tan\,A = \frac{2\,tan\,\frac{A}{2}}{1 - tan^2\frac{A}{2}}$$

8. The horizontal distance between two vertical objects is 121 yds., and the angle which the straight line joining their tops makes with the horizon is 15° 25′ ; find the distance between the tops.

9. At noon a column in the direction E. S. E. from an observer cast a shadow, the extremity of which lay in the direction N.E. from him, the elevation of the column was found to be 45°, and the length of the shadow 80 feet ; calculate the height of the column.

10. Prove that $cos\ 3\ A = 4\ cos^3 A - 3\ cos\ A$.

11. Wishing to ascertain the height of a church steeple, I select two stations in line with it and 52 yds. apart ; at those stations I find the elevation to be 58° 14′ and 36° 42′ respectivly ; the height of my eye above the ground is 4 ft. 6 inches ; what is the height of the steeple ?

12. Simplify $$\frac{1}{4\,(1 + \sqrt{x})} + \frac{1}{4\,(1 - \sqrt{x})} + \frac{1}{2\,(1 + x)}$$

13. By selling a horse at £24, I lose as much per cent. as it cost me. What was the prime cost of it ?

THIRD YEAR.

HYDROSTATICS AND OPTICS.

FRIDAY, APRIL 1ST:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Find approximately what would be the height of the atmosphere if its density were everywhere uniform.

2. A cylindrical diving-bell a feet in height is sunk in sea-water until the top of the bell is b feet below the surface, find by Boyle and Marriotte's law how high the water will rise in the bell.

3. Investigate fully the following formula for the specific gravity of a mixture of dry air and aqueous vapour in which p is the elastic force of the mixture, and f that of the vapour; the specific gravity of the vapour being .622.

$$\text{sp. gr.} = 1 - 0.378\,\frac{f}{p}.$$

4. A brass weight which, when immersed in water weighs B' grains, is attached to a piece of cork which weighs W grains in air, and the compound body when immersed in water is found to weigh W' grains, show that the specific gravity of the cork is

$$\frac{W}{B' + W - W'}$$

5. Find the pressure in pounds of a column of water 4 inches in diameter and 45 feet in height.

6. If the elastic force of steam in a boiler be $5\frac{1}{2}$ atmospheres, calculate the pressure on a safety valve whose area is 5.4 square inches.

7. If a piece of iron float in the mercury within a barometer, examine whether there will be any change in the height of the mercury in consequence.

8. State the laws of reflexion of light, and thence explain the formation of images by plane mirrors.

a. An image of a candle being formed by a looking-glass, within what limits must the eye be placed in order to see the image.

9. The focal length of a concave spherical mirror is a mean proportional between the distances of the conjugate foci from the principal foci.

10. The deviation of a ray of light in passing nearly perpendicularly through a thin concave lens is constant, when the distance of the ray from the axis is given.

11. An object 5 inches in diameter is placed at a distance of 14 inches from a convex lens of 7 inches focal length, find position and magnitude of image.

12. Describe the camera obscura.

13. Describe the common astronomical telescope, and find its magnifying powers.

THIRD YEAR.

MECHANICS.

MONDAY, APRIL 4TH:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. If a heavy particle be projected in a vacuum with a velocity V and at an angle e with the horizon, prove that its velocity at any time t of its flight is given by the equation :

$$v^2 = V^2 - 2\ Vgt\ sin\ e + g^2\ t^2$$

2. An imperfectly elastic sphere, whose co-efficient of elasticity is $e =$ tan 30°, impinges upon a plane in such a manner that its velocity after impact is to its velocity before impact as sin 45° to radius. Find the angles of incidence and reflexion.

3. An iron seconds pendulum of length l has its length altered to l' by a change of temperature, investigate a formula for finding the acceleration in one day, and calculate the amount if the ratio of $l'-l$ to l be 1 : 24,400.

4. Prove that the velocity acquired by a body in falling down a circular arc in a vertical plane is the same as that acquired in falling down the vertical height between the two ends of the arc.

5. If a body move from rest under the action of a constant force, the space described is equal to half the product of the time and final velocity.

6. State the principle of "Constancy of work done," and apply it to find the condition of equilibrium in the lever.

7. Find the horse-power of a steam engine capable of raising 750 tons of coal per day of 12 hours from a pit 100 fathoms deep.

8. A ship sails due north at the rate of 4 knots an hour, and a ball is rolled towards the east, across her deck, at right angles to her motion, at the rate of 10 feet per second find the direction of the real motion.

9. Describe the first kind of the Burton systems of pulleys and find the ratio of the power to the resistance.

10. In the moveable inclined plane find the ratio of the power to the pressure on the inclined plane.

11. Find the ratio of the power to the resistance in the Wheel and Axle.

12. Find the centre of gravity of a polygon.

13. State and express algebraically the law of Universal Gravitation.

B. A. ORDINARY EXAMINATION.

ASTRONOMY—OPTICS.

FRIDAY, APRIL 8TH:—MORNING, 9 TO 12.

Examiners,..... ..... { ALEXANDER JOHNSON, LL.D. / REV. A. N. MCQUARRIE, B.A.

1. Define Latitude and Longitude for a place on the earth and for a star; Right Ascension, Declination, Azimuth, Altitude, Vertical Circles, Prime Vertical, First point of Aries.

2. Prove from the following data that the Moon when in opposition must pass through the Earth's shadow, provided she do not pass over or under it:—Mean apparent diameter of Sun = 1923″; Sun's Horizontal Parallax = 8″.7.

3. Explain a method for finding the height of a mountain in the Moon.

4. From what experiments on prisms did Newton conclude that it was impossible to make achromatic telescopes. State his reasoning fully. Show that his conclusion was equivalent to supposing the *dispersive powers* of all bodies to be the same. What was the cause of his error?

5. Give Townsend's geometrical construction for the path of a ray passing through a thin *concave* lens.

6. Prove for a *convex* mirror, that the focal length is a mean proportional between the distances of the conjugate foci from the principal focus.

7. Define Precession, Nutation, and Aberration.

8. Explain the various methods of finding the longitude of a place on the earth's surface.

9. The earth's periodic time is $365\frac{1}{4}$ days; the synodic period of Mars is 780 days: calculate the periodic time of Mars, and explain the process.

10. A bright ball, 4 inches in diameter, is suspended in front of a convex mirror of 11 inches radius, at a distance of 14 inches; find the apparent size of the image, and its position.

11. Prove that the deviation of a ray of light in passing nearly perpendicularly through a thin lens is constant, when the distance of the ray from the axis is given.

12. Describe Hadley's Sextant, and the manner of using it.

B.A. ORDINARY EXAMINATION.

MECHANICS—HYDROSTATICS.

MONDAY, APRIL 11TH:—MORNING, 9 TO 12.

Examiners,..... { ALEXANDER JOHNSON, LL.D. / REV. A. N. MCQUARRIE, B.A.

1. If n and n' be the number of vibrations, in a day, of the same pendulum at places where the force of gravity is represented by g and g' respectively, show that

$$n - n' = \frac{n}{2} \cdot \frac{g - g'}{g}$$

2. Find the power that will support a given weight on a given inclined plane, the power acting in any given direction.

3. If a heavy particle be projected in vacuo at an elevation e, with a velocity V, show that the equation of the trajectory is

$$= x \tan e - \frac{g x^2}{2V^2 \cos^2 e}$$

4. If a rectangular surface 10 ft. by 5 be immersed in water with its short sides horizontal, the upper being 20 feet, and the lower 26 feet below the surface of the water; calculate the pressure it sustains.

5. A piece of iron floats in the mercury in a barometer, examine whether the mercury rises or falls in consequence.

6. Determine the force which, in the Siphon, causes the fluid to descend from one vessel to another.

7. The moment of the resultant of any number of parallel forces with respect to any plane is equal to the sum of the moments of the component forces with respect to that plane.

8. If a circle be drawn in a vertical plane, and from its highest point chords be drawn; the time occupied by a body in running down any chord is constant.

9. Prove that the part of centrifugal force which is employed in diminishing gravity varies as the square of the cosine of latitude.

10. If the surface of a liquid, subject to any forces whatever, be free, it must, at every point taken upon it, be perpendicular to the resultant of the forces which act upon that point.

11. State and illustrate Boyle and Marriotte's law.

12. How much of its weight will 1 cwt. of cast iron lose if immersed in water; the sp. g. of cast iron being 7·25 ?

B.A. ORDINARY AND THIRD YEAR.

EXPERIMENTAL PHYSICS:—ELECTRICITY AND SOUND.

TUESDAY, APRIL 5TH:—MORNING, 9 TO 12.

Examiner, ...ALEXANDER JOHNSON, LL.D.

1. State Ohm's law; and prove by it: 1°. that if the external resistance is very small, a battery of several cells produces no greater effect than a single cell. 2°. That for the electric light, or a long telegraphic circuit, the strength of the current is, approximately, proportional to the number of cells.

2. Describe Gaugain's tangent galvanometer with two circles, and show that the strength of the current is proportional to the tangent of the angle of deflection. Why must the needle be short?

3. Describe Blavier's method for finding the position of a "fault" in a telegraphic line, and prove the formula:—

$$x = S - \sqrt{(T - S)\,(R - S)}$$

4. Describe the Jablochkoff candle.

5. Describe a method for firing a mine by electricity.

6. Describe an experiment by which it is shown that a sound is produced by the molecular disturbance when an iron rod is magnetized.

7. Describe the mode in which sound is propagated through the air; define length of wave, and amplitude. What is the difference between the wave-motion in sound and light?

8. State the physical causes of the pitch, the intensity, and the timbre or quality of musical tones.

9. Two tuning-forks standing on resonant cases are set in vibration and are found to be in perfect unison, a five-cent piece is then attached to one of them, and beats are beard; explain the cause of these, and show that the number of beats in a second is equal to the difference in the number of vibrations in a second.

10. Describe König's apparatus for the analysis of sound.

11. Describe Quincke's apparatus for the measurement of the length of a wave of sound and the mode of measurement.

12. The density of iron being 7.8 and that of copper 8.8, what must be the relative thickness of wires of these materials, of the same lengths and equally stretched, so that they may give the same note.

HONOUR EXAMINATIONS IN MATHEMATICS.

FIRST YEAR.

GEOMETRY.

FRIDAY, APRIL 22ND :—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL D.

1. The difference of the squares on the tangents from any point to two circles is equal to double the rectangle under the perpendicular let fall from the point on their radical axis, and the line joining their centres.

2. Through a given point without a given circle any transversal is drawn cutting the circle, and a point taken on it such that the reciprocal of its distance from the given point is equal to the sum of the reciprocals of the intercepts between the given point and the circle, find the locus of the point of section.

3. Describe a circle passing through a given point and touching two given circles.

4. If two circles intersect, and if from either point of intersection two diameters be drawn, the straight line joining their extremities will pass through the other point of intersection, and be at right angles to the chord of intersection.

5. Given six points on the circumference of a circle ; find a seventh point on the circumference, such that the anharmonic ratio of it and three of the points taken in an assigned order shall be equal to the anharmonic ratio of it and the other three points taken in an assigned order.

6. Any quadrilateral is divided by a straight line into two others ; prove that the intersections of the diagonals of the three lie in a straight line.

7. Given the rectangle under the sides, the bisector of the base, and the difference of the base angles of a triangle ; construct the triangle.

8. If D_1, D_2, D , D^4, denote the distances of the centre of the circumscribed circle of any triangle from the centres of the four circles touching the sides, prove $D_{1\,2} + D_2{}^2 + D_3{}^2 + D_4{}^2 = 12\,R^2$.

9. Given the vertical angle and area of an isosceles triangle, construct it.

10. The four points in which the inscribed and the three escribed circles of a triangle touch any side and that side produced, form two pairs of points equidistant from the middle point of that side.

11. If the three perpendiculars of a triangle ABC intersect in O, and (produced, if necessary) meet the circumscribed circle in G, H, and K; prove that the distances OG, OH and OK are bisected by the sides of the triangle.

12. If two anharmonic pencils with different vertices have a common ray and the same anharmonic ratio, the intersections of the three pairs of corresponding rays will lie in the same straight line.

FIRST YEAR.

ALGEBRA—THEORY OF EQUATIONS.

MONDAY, APRIL 25TH:—MORNING, 9 TO 12.

Examiner,..... ALEXANDER JOHNSON, LL.D.

1. State and prove Sturm's Theorem.

2. Apply Sturm's Theorem to prove that there is only one real root for the equation:

$$x^3 + 6x^2 + 10x - 1 = 0.$$

3. Calculate by Newton's method the root between 2 and 3 of the equation:

$$x^3 - 4x - 12 = 0.$$

4. Calculate by Horner's method the root between 1 and 2 of the equation:

$$x^4 - 2x^3 + 21x - 33 = 0$$

5. Find the roots of the equation $x^5 - 1 = 0$.

6. Explain the method of depressing a reciprocal equation of an even degree with its last term positive.

7. Find the sum of the squares of the reciprocals of the roots of

$$x^6 - 6x^5 + 40x^3 + 60x^2 - x - 1 = 0$$

8. The roots of the equation $x^3 + px^2 + qx + r = 0$ are a, b, c, transform the equation into another whose roots shall be

$$b^2c^2, c^2a^2, a^2b^2$$

9. Show that the equation $x^7 - 2x^4 + x^3 - 1 = 0$ has at least four imaginary roots.

10. Find the number of different triangles into which a polygon of n sides may be divided by joining the angular points.

11. Resolve into its partial fractions

$$\frac{x^2 + px + q}{(x-a)(x-b)(x-c)}$$

12. Divide 14332216 by 6541 in the septenary scale.

SECOND YEAR.

ANALYTIC GEOMETRY.

FRIDAY, APRIL 22ND:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. (*a*) Find the equation of the conic which makes intercepts λ, λ', μ, μ' on the axes. (*b*) Hence show that if an equilateral hyperbola circumscribe a triangle, it will also pass through the intersection of its perpendiculars.

2. Show that the locus of the intersection of the perpendicular from a focus on any tangent to a central conic, with the radius vector from the centre to the point of contact is the corresponding directrix.

3. Find the locus of the centre of a circle which passes through a given point and makes a given intercept on a given line.

4. Show that by a proper transformation the equation of the parabola

$$(ax + by)^2 + 2gx + 2fy + c = 0$$

can be reduced to the shape $y^2 = px$. Find the equations of the new axes and show that the value of p is $\frac{2(fa - gb)}{(a^2 + b^2)^{\frac{3}{2}}}$

5. In the parabola $y^2 = 4mx$, the distance of any point $x'y'$ in the curve from the facus is $x' y' + m$.

6. The angle subtended at the focus of an ellipse by any chord is bisected by the line joining the focus to its pole.

7. The triangle formed by joining the extremities of conjugate diameters of an ellipse or hyperbola has a constant area.

8. Find the locus of the middle point of the chords of a conic, parallel to the given line $y = mx$.

9. Find in trilinear co-ordinates the equations of the bisectors of the sides of a triangle and show that they meet in a point.

10. Though the intersection of two circles a right line is drawn; find, using polar co-ordinates, the locus of the middle point of the portion intercepted between the circles.

11. The equation of the chord of the circle

$$x^2 + y^2 = r^2$$

can be put in the form

$x \cos \frac{1}{2}(\theta' + \theta'') + y \sin \frac{1}{2}(\theta' + \theta'') = r \cos \frac{1}{2}(\theta' - \theta'')$ where θ', θ'' are the angles which radii drawn to the extremities of the chord make with the axis of x.

12. Find the equation of the line drawn parallel to the axis of x through the intersection of the lines $Ax + By + C = 0$ and $A'x + B'y + C' = 0$.

SECOND YEAR.

CALCULUS -TRIGONOMETRY.

MONDAY, APRIL 25TH :—MORNING, 9 TO 12.

Examiner,..... ALEXANDER JOHNSON, LL.D.

1 Prove that the length (s) of a curve expressed in polar co-ordinates is

$$s = \int \left(1 + \frac{r^2 \, d\theta^2}{dr^2}\right)^{\frac{1}{2}} dr$$

and apply it to find the length of the cardioid

$$r = a(1 + \cos\theta)$$

2. Show that the equations of the cycloid may be put in the shape

$$x = a(\phi + \sin\phi), \; y = a(1 + \cos\phi)$$

and find the volume of the surface generated by the revolution of the curve round its base.

3. Integrate:

$$\int e^x (\cos x + \sin x)\, dx; \quad \int \frac{x\, dx}{(a + bx)^{\frac{1}{3}}}; \quad \int \frac{dx}{x + \sqrt{x-1}}$$

4. Find formulæ of reduction for:

$$\int x^n \cos ax \, dx; \quad \int x^n e^{mx} \, dx$$

5. Integrate:

$$\int \frac{d\theta}{\tan^5 \theta}; \quad \int \frac{\sin^5 \theta \, d\theta}{\cos^2 \theta}; \quad \int \frac{3x \, dx}{x^2 - x - 2}.$$

6. Integrate:

$$\int \frac{dx}{\sqrt{5 + 4x - x^2}}; \quad \int_0^1 \frac{dx}{1 + x + x^2}; \quad \int x \tan^2 x \, dx;$$

$$\int \frac{d\theta}{a + b\cos\theta} \text{ when } a \text{ is greater than } b.$$

7. Find the maximum or minimum values of

$$1 + \frac{3x}{\sqrt{4 + 5x^2}}; \; 4x^3 - 15x^2 + 12x - 1.$$

8. Find six terms of the development of $\frac{e^x}{\cos x}$ in ascending powers of x.

9. If $y = a\cos(\log x) + b\sin(\log x)$, prove that

$$\frac{x^2 dy^2}{dx^2} + x\frac{dy}{dx} + y = 0$$

10. Prove that

$$\left(\frac{d}{dx}\right)^n (e^{ax} u) = e^{ax}\left(a + \frac{d}{dx}\right) u.$$

11. Find $\frac{dy}{dx}$ from

$$y = e^{ax}\sin^m r x; \; y = \frac{1 - x}{\sqrt{1 + x^2}}; \quad y = \sin(\sin x).$$

12. If E be the spherical excess, prove

$$\sin\tfrac{1}{2}E = \frac{\sqrt{\sin s \sin(s-a)\sin(s-b)\sin(s-c)}}{2\cos\frac{1}{2}a\cos\frac{1}{2}b\cos\frac{1}{2}c}$$

13. State Napier's rules for the solution of right-angled spherical triangles.

14. Assuming the expansion for $\log_e(1 + x)$ prove

$$\log_e u = 2\left\{\frac{u-1}{u+1} + \frac{1}{3}\left(\frac{u-1}{u+1}\right)^3 + \&c.\right\}$$

15. In any plane triangle prove that

$$c^2 = (a + b)^2 \sin^2\tfrac{1}{2}C + (a - b)^2 \cos^2\tfrac{1}{2}C.$$

B. A. EXAMINATION FOR HONOURS IN MATHEMATICS AND NATURAL PHILOSOPHY.

I.

PLANETARY THEORY—NEWTON'S PRINCIPIA.

WEDNESDAY, MARCH 30TH:—MORNING 9 TO 1.

Examiner,..... ALEXANDER JOHNSON, LL.D.

1. In the planetary theory, find an expression for the component of the disturbing force in any direction, by means of the disturbing function R.

2. Prove that

$$\frac{dR}{d\theta} = \frac{dR}{d\varepsilon} + \frac{dR}{d\tilde{\omega}}$$

3. Deduce the following differential equations of motion for a disturbed planet:—

$$\frac{d^2r}{dt^2} - r\left(\frac{d\theta_\circ}{dt}\right)^2 = -\frac{\mu}{r^2} + \frac{dR}{dr}$$

$$\frac{d}{dt}\left(r^2\frac{d\theta_\circ}{dt}\right) = \frac{dR}{d\theta}$$

4. Define the instantaneous ellipse, and investigate the formula for calculating the excentricity:—

$$\frac{de}{dt} = \frac{na(1-e^2)}{\mu e}\frac{dR}{d\varepsilon} - \frac{na\sqrt{1-e^2}}{\mu\varepsilon}\left(\frac{dR}{d\varepsilon} + \frac{dR}{d\tilde{\omega}}\right)$$

5. Explain the method of calculating approximately the secular variations of the elements of a planet's orbit in a given time.

6. Assuming the following expression for the non-periodical part of R,

$$m'\left\{\frac{C_\circ}{2} + \frac{1}{8}aa'D_1(e^2+e'^2) - \frac{1}{4}aa'D_2ee'\cos(\tilde{\omega}-\tilde{\omega}) - \frac{1}{8}aa'D_1(\tan^2 i + \tan^2 i') + \frac{1}{4}aa'D_1\tan i\tan i'\cos(\Omega-\Omega') + \&c.\right\}$$

state and prove Lagrange's theorem concerning the stability of the excentricities of the Planetary orbits.

7. Assuming

$$\frac{d\tilde{\omega}}{dt} = \frac{na\sqrt{1-e^2}}{\mu e}\frac{dR}{de} + \frac{na\tan^2\frac{i}{2}\omega}{\mu\sqrt{1-e^2}} - \frac{dR}{di}$$

Show by integration that

$$\tan \tilde{\omega} = \frac{M_1 \sin(g_1 t + \gamma_1) + M_2 \sin(g_2 t + \gamma_2)}{M_1 \cos(g_1 t + \gamma_1) + M_2 \cos(g_2 t + \gamma_2)}$$

8. Investigate a method for determining :—

a. Whether the perihelion oscillates or moves constantly in one direction.

β. In the former case, the periods of its regression and progression.

9. In Newton's Lunar Theory find an expression for the central disturbing force.

a. Show that the mean central disturbing force is ablatitious.

10. Prove that the Moon's periodic time is increased by the disturbing force.

11. If the orbit in which a body moves revolve round a centre of force with an angular velocity bearing a fixed ratio to that of the body; show that the body may be made to move in the revolving orbit in the same manner as in the orbit at rest, by the action of a force tending to the same centre.

12. A body moves in a parabola about a centre of force in the focus, find the law of force.

II.

ELECTRICITY—THEORY OF THE POTENTIAL.

MONDAY, APRIL 4TH :—MORNING, 9 TO 1.

Examiner,..... ALEXANDER JOHNSON, LL.D.

1. Prove Green's Theorem

$$\iiint U \left(\frac{d^2 V}{dx^2} + \frac{d^2 V}{dy^2} + \frac{d^2 V}{dz^2}\right) dx\, dy\, dz =$$

$$\iint U \frac{dV}{dp} dS - \iiint \left(\frac{dU}{dx}\frac{dV}{dx} + \frac{dU}{dy}\frac{dV}{dy} + \frac{dU}{dz}\frac{dV}{dz}\right) dx\, dy\, dz$$

where U and V are any finite and continuous functions of the coordinates of a point in space; the first integral on the right hand side extending over the whole superficies of any given closed surface S, the elementary length of whose normal measured outwards is dp; and the remaining integrals being taken throughout the whole of the space inside the same surface.

2. If V be the potential of a system of masses M, M', and S be an equipotential surface of the system enclosing M' in its interior, while M is outside of it, and if V_i be the potential of the inside mass M' on any external point O, prove

$$V_i = -\frac{1}{4\pi}\int \frac{1}{r}\frac{dV}{dn}\,dS$$

r being the distance of any point of the masses from O.

a Prove that a mass contained within one of its equipotential surfaces may be distributed over this surface as a thin shell so as to produce the same effect as the given mass at all points outside the equipotential surface.

3. Prove Gauss's theorem, that the mean potential over a spherical surface due to matter entirely outside the sphere is equal to the potential of this matter at the centre of the sphere.

4. Show that the amount of work done by the mutual attractive forces of the particles of a self-attracting solid when the body changes from one figure to another may be expressed by

$$\frac{1}{2}\int V\,dm$$

stating the meaning and limits of this integral.

5. If in any portion of empty space of finite volume the potential has a constant value, it will have this value throughout all space, which can be reached without passing through any of the mass.

6. Find the work done in the discharge of a Leyden jar.

7. Describe Sir W. Thomson's attracted-disc electrometer, explaining how difference of potentials is measured by it, and prove the formula

$$V - V' = D\sqrt{\frac{8\pi F}{S}}$$

8. It is desired to obtain the maximum current-strength from a voltaic battery of n cells, when the external resistance is given; show, from Ohm's law, by differentiation, that the internal and external resistances must be made equal.

9. State and prove the principle of Wheatstone's Bridge by the method of potentials.

10. Describe, with the aid of a diagram, a box of resistance coils with bridge attached, showing the connections, and explaining the

mode of working. Why is it expedient, 1°, That if the resistance to be measured is large, all the resistances unplugged should be large; but in the contrary case small? 2° To make battery contact before making it for the galvanometer.

11. If a short magnet be hung in the centre of a coil placed in the magnetic meridian (as in the tangent galvanometer), the value C in electro-magnetic measure of any current passing through the coil and deflecting the magnet through the angle θ is

$$C = \frac{H k^2}{L} \tan \theta$$

where H is the horizontal component of the earth's magnetism, L is the length of the wire forming the coil, and k the radius of the coil.

12. If Q be the quantity of electricity in an instantaneous current show that it may be measured by the throw of a galvanometer needle when a single instantaneous discharge passes through it, from the formula

$$Q = \frac{2}{\gamma} \frac{H}{\pi} \frac{T}{\pi} \sin \frac{a}{2}$$

where T is the time of a single vibration of the needle under the earth's magnetism, and γ is the galvanometer constant.

13. Describe Mance's method for finding the internal resistance of a battery.

III.

MECHANICS—(*First Paper*).

THURSDAY, APRIL 7TH:—MORNING, 9 TO 12.

Examiner, ... ALEXANDER JOHNSON, LL.D.

1. The attraction of an ellipsoidal shell at any external point is normal to the confocal ellipsoid through the point.

2. The components of the attraction of a homogenous oblate spheroid on a particle placed on its surface are

$$X = -\frac{3 M x}{2 c^2 e^3} \left(\tan^{-1} e - \frac{e}{1 + e^2} \right)$$

$$Y = -\frac{3 M y}{2 c^2 e^3} \left(\tan^{-1} e - \frac{e}{1 + e^2} \right)$$

$$Z = -\frac{3 M z}{2 c^2 e^3} \left(e - \tan^{-1} e \right)$$

3. A cylindrical vessel with a horizontal base, and having a very small horizontal orifice in the base, is kept constantly full of water at a height h above the orifice; prove that the velocity of efflux is approximately $= \sqrt{2gh}$

4. A hollow cylinder of indefinite length is filled with homogeneous air, a portion of which is disturbed in such a matter that all the particles in any section perpendicular to the axis are under the same initial circumstances of displacement; find the velocity with which the disturbance is propagated along the tube.

5. Find the notes which can be produced from a tube closed at one end.

6. Investigate the *transversal* vibrations of strings, and show that the velocity of propagation is the velocity which would be acquired by a heavy body falling through half the length of a portion of the cord of which the weight is equal to the tension.

7. A particle, moving in a resisting medium, is acted on by a central force; find the resistance that a given curve may be described.

8. A particle acted on by any force, and resting on a smooth horizontal plane, is attached by an inextensible string to a point which moves in a given manner in that plane; determine the motion of the particle.

9. Two smooth spheres, moving in given directions and with given velocities impinge, find the motion after impact and the apparent loss of kinetic energy.

10. A particle moves in a smooth straight tube which revolves uniformly round a vertical axis to which it is perpendicular, determine the motion.

IV.

MECHANICS (*Second Paper*).

THURSDAY, APRIL 14TH:—MORNING, 9 TO 1.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Suppose the ice to melt from the polar regions twenty degrees round each pole to the extent of something more than a foot thick, and thus raise the sea-level by an exceedingly small amount; show that this would slacken the earth's rate as a time-keeper; and investigate a formula for calculating the amount.

2. A circular area is turning about a point A on its circumference. Suddenly A is loosed and another point B also on the circumference is fixed, show that if AB is a quadrant, the angular velocity is reduced to one-third its value.

3. Define *principal axes* mathematically, and show that at every point of a material system there are always three principal axes at right angles to each other. What is the physical property of these axes?

4. Prove that any displacement of a body can be represented by a *screw* motion.

5. A body is displaced by a rotation through a *finite* angle θ round an axis through the origin whose direction cosines are l, m, n, so that a point P, whose co-ordinates are x, y, z, is removed to P'. If ξ, η, ζ, are the co-ordinates of the middle point of PP' prove

$$\delta x = 2 \tan \frac{\theta}{2} (m\zeta - n\eta)$$

$$\delta y = \&c. \qquad \delta z = \&c.$$

6. If ω_1, ω_2, ω_3, be the angular velocities of a body about three moving axes, explain and prove the three following equations:—

$$\omega_1 = \frac{d\theta}{dt} \sin\phi - \frac{d\psi}{dt} \sin\theta \cos\phi$$

$$\omega_2 = \frac{d\theta}{dt} \cos\phi + \frac{d\psi}{dt} \sin\theta \sin\phi$$

$$\omega_3 = \frac{d\psi}{dt} \cos\theta + \frac{d\phi}{dt}$$

7. The motion of a particle is referred to three rectangular axes meeting in a fixed origin; the axes move with angular velocity θ_1, θ_2, θ_3, about their instantaneous position; the components of the velocity of the particle referred to the moving axes are u, v, w, prove that the accelerations parallel to the axes are

$$X = \frac{du}{dt} - v\,\theta_3 + w\,\theta_2$$

$$Y = \frac{dv}{dt} - w\,\theta_1 + u\,\theta_3$$

$$Z = \frac{dw}{dt} - u\,\theta_2 + v\,\theta_1$$

8. Assuming Euler's equations for the motion of a body about a fixed point referred to the principal axes at the point,

$$A\frac{d\omega_1}{dt} - (B-C)\omega_2\,\omega_3 = L. \&c., \&c.$$

investigate the case when there are no impressed forces, and two of the principal axes equal.

9. State and prove the principal of the conservation of Vis Viva, explaining clearly why it is necessary that the equations expressing the geometrical relations of the system should not contain the time explicitly.

10. Two particles connected together by a rigid imponderable rod, are constrained to move along two grooves respectively, the former horizontal, the latter vertical ; supposing the particles to be placed in any assigned position, find the angular velocity of the rod in any position of its descent, and the pressures on the grooves.

11. A globe descends from instantaneous rest down the surface of a perfectly rough hemispherical bowl, the centre of the globe always remaining in the same vertical plane; find the velocity of the globe at any position of its descent.

12. A rod is kept in a vertical position by means of two small rings, its lower end being supported on an inclined plane, which is at liberty to move freely on a horizontal plane; determine the motion of the rod and the plane.

V.

GEOMETRY OF THREE DIMENSIONS.

WEDNESDAY, APRIL 20TH :—MORNING, 9 to 12.

Examiner,..... .....ALEXANDER JOHNSON, LL.D.

1. Define lines of curvature on any surface and find their differential equation.

a. Hence show that the lines of curvature on the ellipsoid

$$\frac{x^2}{a^2}+\frac{y^2}{b^2}+\frac{z^2}{c^2}=1$$

are projected on the plane of xy into a series of conics whose axes a' and b' are connected by the relation

$$\frac{a'^2(a^2-c^2)}{a^2(a^2-b^2)}+\frac{b'^2(b^2-c^2)}{b^2(b^2-a^2)}=1$$

2. Find an expression for the value of the principal radii of curvature at any point of a surface, the axes of co-ordinates having any position.

3. Any tangent plane to a surface is intersected by a consecutive tangent plane in the diameter of the indicatrix which is conjugate to the direction in which the consecutive point is taken.

4. A surface is generated by a straight line which always passes through the two fixed straight lines

$$y=mx,\ z=c\ ;\ \text{and}\ y=-mx,\ z=-c$$

prove that the equation to the surface generated is of the form

$$\frac{y-mx}{z-c}=\phi\left(\frac{y+mx}{z+c}\right)$$

5. Show that the locus of a point, whence three tangent lines, mutually at right angles can be drawn to the quadric

$$\frac{x^2}{a^2}+\frac{y^2}{b_2}+\frac{z^2}{c^2}=1$$

is

$$\frac{x^2}{a^2}\left(\frac{1}{b^2}+\frac{1}{c^2}\right)+\frac{y^2}{b^2}\left(\frac{1}{a^2}+\frac{1}{c^2}\right)+\frac{z^2}{c^2}\left(\frac{1}{a^2}+\frac{1}{b^2}\right)=\frac{1}{a^2}+\frac{1}{b^2}+\frac{1}{c^2}$$

6. Prove that the partial differential equation of conoidal surfaces, if the axis be the intersection of the planes α, β, and the generator be parallel to the plane γ where $a = a,\ x + a_2\ y + a_3\ z + a_4$ is

$$\begin{vmatrix} U_1, & U_2, & U_3, \\ \beta\ a_1 - a\ \beta_1, & \beta\ a_2 - a\ \beta_2, & \beta\ a_3 - a\ \beta_3, \\ \gamma_1, & \gamma_2, & \gamma_3, \end{vmatrix} = 0$$

7. If two confocal quadrics intersect and a radius of one be drawn parallel to the normal to the other at any point of their curve of intersection, this radius is of constant length.

8. The distance between two points, one on each of two confocal ellipsoids is equal to the distance between the two corresponding points.

9. Find the locus of the intersection of three tangent planes to an ellipsoid at the extremities of three conjugate diameters.

10. In the hyperboloid of one sheet any two rectilinear generators belonging to opposite systems lie in the same plane.

11. The rectangles under the segments of a pair of intersecting chords of a quadric are proportional to the rectangles under the segments of a pair of parallel inteesecting chords.

12. Find the locus of the middle points of chords of a central quadric parallel to the line

$$\frac{x}{\lambda}=\frac{y}{\mu}=\frac{z}{\nu}$$

VI.

CALCULUS.

FRIDAY, APRIL 22ND :—MORNING, 9 TO 12.

Examiner,..... ALEXANDER JOHNSON, LL.D

1. Prove that

$$f\left(\frac{d}{dx}\right)e^{mx}\mathrm{X}=e^{mx}f\left(\frac{d}{dx}+m\right)\mathrm{X}$$

and hence find the solution of

$$\frac{du^2}{dx^2} - 3\frac{du}{dx} + 2u = xe^{mx}.$$

2. Show that the solution of the partial differential equation

$$(b + cq)^2 r - 2(b + cq)(a + cp)s + (a + cp)^2 t = 0$$

is

$$y + x\phi(ax + by + cz) = \psi(ax + by + cz).$$

Interpret the equation.

3. Prove that the partial differential equation of the first order which results from a primitive of the form $u = f(v)$, where u and v are determinate fractions of x, y and z is necessarily linear.

4. Solve the simultaneous differential equation :

$$\frac{d^2x}{d^2t} - 3x - 4y + 3 = 0$$

$$\frac{d^2y}{dt} + x - 8y + 5 = 0$$

5. Find the condition necessary in order that the differential equation $P\,dx + Q\,dy + R\,dz$, where P, Q, R, are fractions of the variables x, y, z, should be derivable from a single primitive.

6. Determine the curve in which the radius of curvature is equal to the normal, the directions of these lines being *opposite* to one another.

7. Find the solutions of the following equations :

(a) $$nx^3\frac{d^2y}{dx^2} = \left(y - x\frac{dy}{dx}\right)^2$$

(b) $$\frac{dy}{dx} - x\frac{d^2y}{dx^2} = f\left(\frac{d^2y}{dx^2}\right)$$

8. Integrate

$$(a + bx)^2\frac{d^2y}{dx^2} + b(a + bx)\frac{dy}{dx} + n^2y = 0$$

9. Find the complete primitive of

$$yp + nx = \sqrt{y^2 + nx^2}\sqrt{1 + p^2}$$

10. Show that the equation

$$x\frac{dy}{dx} - ay + by^2 = cx^{2a}$$

is reducible to an exact differential equation.

11. Determine the conditions under which the equation $Mdx + Ndy = 0$ can be made integrable by a factor which is a function of the product xy.

a. Hence integrate the equation

$$(x^2y^2 + 1)y\,dx + (x^2y^2 - 1)x\,dy = 0$$

12. Integrate

$$\frac{dx}{\sqrt{x^2+y^2}}+\left\{1-\frac{x}{\sqrt{x^2+y^2}}\right\}\frac{dy}{y}=0$$

VII.

EXPERIMENTAL PHYSICS.

MONDAY, APRIL 25TH:—MORNING, 9 TO 12.

Examiner, ... ALEXANDER JOHNSON, LL.D.

1. Give Fresnel's theoretical explanation of the laws of rotatory polarization in rock-crystal, and describe the experimental test in verification of it.

2. State the laws of interference of polarized light, and hence explain the phenomena of depolarization and colour produced by crystalline plates.

3. State Fresnel's theory of double refraction.

4. State the phenomena, and show that the *colours of thick plates* as observed by Newton arise from interference.

5. Give Young's theory of diffraction. By what experimental tests was it shown it to be incomplete. Give Fresnel's theory.

6. Account for the rectilinear propagation of light on the principles of the wave-theory.

7. Into a glass globe, the capacity of which at 0° is 250 cc., are introduced 25 cc. of air measured at 0° and 76 cm. The flask being closed and heated to 100°, find the internal pressure, the coeff. of cubical expansion of glass being $\frac{1}{38700}$.

8. From what height must a lead bullet fall in order that its temperature may be raised n degrees? and what velocity will it have acquired, assuming that all the heat is expended in raising the temperature of the bullet; the specific heat of lead being .0314, and Joules equivalent in metres being 424.

9. Explain the manner in which the compressibility of a liquid may be determined from the velocity of sound in it.

10. Define resultant tones; account for them, and classify them.

ENGLISH LANGUAGE AND LITERATURE.

ENGLISH LANGUAGE.

FRIDAY, APRIL 8TH:—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

1. What are Runes? What debt did the Anglo-Saxon alphabet owe to them?

2. Explain Umlaut and Ablaut: examples.

3. The difference between Comparative and Descriptive grammar?

4. Name the Low German languages.

5. Define a vowel. Name the fundamental vowels in English.

6. Whence have we derived the letter "Y"? Comment on it in rhyme and tyrant.

7. Notes on *wh*o, dau*gh*ter, a*x* (verb) cou*l*d, night*ing*ale, slum*b*er.

8. How are the plurals of English nouns formed? Explain any three forms worthy of note.

9. The feminine of lord, fox, count; the masculine of duck, goose, mistress.

10. Explain the forms of the last answer. The history of —ster?

11. The source of the personal endings of verbs? Two examples.

12. The past tense and past participle of write, plead, slink, swear, pique?

13. Underline the strong verbs of 12. Why are they strong?

14. Explain the phrase, *How do you do*. The exact meanings of have, shall, wit. The past tense of wit.

15. "To love," the history of the "to"?

16. The pronouns derived from the A.S. article? How?

17. The history of the plurals of *this* and *that?*

18. To what parts of speech may sweet, tin, seeing, but, case, belong?

19. Two flat, three flexional, two phrasal adverbs? Explain the flexional.

20. The exact meanings of, but, till? various meanings of by?

21. Two Historical interjections? their history? a note on la! and waly!

22. Analyse :

(*a*) I met a man whom I implored not to go.

(*b*) Will Honeycomb was complaining to me yesterday that the conversation of the town is so altered of late years that a fine gentleman is at a loss for matter to start discourse, as well as unable to fall in with the talk he generally meets with.

FIRST YEAR.

ENGLISH LITERATURE.

FRIDAY, APRIL 8TH :—AFTERNOON, 2 TO 5.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Name such writers during the period between Bede and Chaucer as were mentioned in the lectures? the work or works of each? a detailed account of two of those works?

2. Relate the cause and the course of the Classical Renascence in the fifteenth and sixteenth centuries. Give proof of its presence in England.

3. Give an account of the nature of Euphuism, Earlier and Later, and of its decay.

4. Show in detail that John Dryden, Joseph Addison, Samuel Pepys Charles Gildon, Thomas Rymer, John Sheffield, Alexander Pope, Sir Christopher Wren, Sir William Soame, Wentworth Dillon, were subject to French influence.

5. Explain the meaning of the words *Popular Influence*; its rise? a detailed account of its various literary forms during the eighteenth century?

INTERMEDIATE EXAMINATION.

ENGLISH LITERATURE.

WEDNESDAY, APRIL 6TH :—MORNING, 9 TO 12.

Examiners,..... { CHAS. E. MOYSE, B.A.
REV. PROF. MCQUARRIE, B.A.

(Not more than twelve questions are to be answered. Any one of these may be selected either from group A or from group B. All the questions are of equal value.)

(A)

1. Spalding says: "A hasty glance over the Roman period teaches two facts which we ought to know." Comment on this assertion.

2. What two periods of the Modern History of English Literature are especially important? Why?

3. "The Literature of the Cymric Celts becomes an object of lively interest." Reproduce the substance of Spalding's remarks concerning it.

4. Name as many Anglo-Saxon poems as you can.

5. Describe the style and the versification of Anglo-Saxon poetry.

6. What does Spalding say about Alfred?

7. Give some account of the Irregular Latin Literature of the Norman period. In which of his dramas has Shakespeare borrowed from that Literature?

8. Give an outline of the "Storie of Thebes."

9. "As the Romances ceased to be produced, the Ballads may be said to have gradually taken their place." Reproduce the substance of Spalding's remarks concerning them.

10. Name the chief works written by John of Fordun, Andrew Wyntoun, John Barbour, Robert Henryson. Assign approximate dates to the last three writers.

11. In what essential respects does Semi-Saxon differ from Anglo-Saxon?

12. Give the outline of Spalding's remarks on the Anglo-Saxon element in English Grammar.

(B)

1. Describe the Classical Renascence, and give evidences of its influence on England.

2. Where is English blank verse first found, (*a*) in translation, (*b*) in original matter. Name Elizabethan Sonneteers, and explain the construction of the Sonnet.

3. Mention the leading characteristics of Roger Ascham's *Toxophilus* and *Scholemaster*.

4. What were Prophesyings? How did they influence the literature of the time?

5. Sketch the life of Edmund Spenser, noticing the essentials of his shorter works as you proceed.

6. Display the plan of *The Faerie Queene*, and show its relation to its day. [No analysis of any portion required].

7. Who is said to have written Gammer Gurton's Needle? Unfold its plot, and comment on its character and language.

8. Mention (*a*) a few facts of Shakespeare's early life, (*b*) references to Shakespeare in contemporary literature.

9. What are the noteworthy features of Shakespeare's early plays I Criticize *Hamlet*.

10. Sketch Francis Bacon's life, and give the purport of his early works. Carefully point out the merits and the defects of his philosophy.

INTERMEDIATE EXAMINATION.

HISTORY OF ENGLAND.

WEDNESDAY, APRIL 6TH :—AFTERNOON, 2 TO 5.

Examiners,..... { CHAS. E. MOYSE, B.A.
REV. PROF. MCQUARRIE, B.A.

1. Name any three noteworthy events during the Roman occupation of Britain, and the chief persons who were concerned in them.

2. Write what you know about the reign of Edward the Confessor *or* of Richard II.

3. Write a list of the sovereigns of England in order, and with dates, during the thirteenth, fifteenth, and seventeenth centuries.

4. Mention two events in the reign of each of those sovereigns.

5. Write in detail on any two of those events.

6. What claim had the House of Hanover to the English throne? State the descent of each sovereign from the first of the English line and the date of accession.

7. Assign events to the following dates: 1095, 1164, 1346, 1513, 1534, 1588, 1707, 1713, 1745, 1854, and make a few comments on each.

8. Explain these terms: ordeal, vassal, Dane-gelt, Dane-lagh, alod.

INTERMEDIATE EXAMINATION.

ENGLISH ESSAY.

THURSDAY, APRIL 14TH :—AFTERNOON, 2 TO 5.

Examiners,..... { CHAS. E. MOYSE, B.A.
REV. PROF. MCQUARRIE, B.A.

Write an Essay, not exceeding three pages in length, on *one* of the following subjects :—

(*a*) Emigration.
(*b*) Dress.
(*c*) Amusements.

[Attend carefully to clearness of expression, sequence of thought, and punctuation.]

THIRD YEAR.

RHETORIC.

WEDNESDAY, APRIL 20UH :—MORNING, 9 TO 12.

Examiner,..... ..... VEN. ARCHDEACON LEACH, D.C.L.

1. Explain the process of Inference and Proof, and mention some of the cases in which, for the purpose of persuasion, the former mode of statement of the subject is preferable.

2. Show the use and necessity of "laying down in a clear and suitable form the proposition or propositions" that you intend to establish in argumentation.

3. Mention the cautions and rules given in regard to the acceptance and examination of facts.

4. What objections lie against the division of Arguments into Moral (or Probable) and Demonstrative (or Necessary)?

5. Give an example of an Indirect Argument.

6. Give a short explanation of the following terms :—
Cause in general, Cause of Cognition, Physical Cause, Moral Cause, Occasional Cause, Instrumental Cause, Cause per se, Cause per Accidens.

7. Explain the kind of Argument denominated Antecedent Probability.

8. In all Arguments from Example (taken in its widest sense as including Induction, Analogy, &c.) what is the assumption which Whately says is implied? Give an example in illustration.

9. What is Dr. Blair's account of the origin of the Prosody of a Language?

10. Describe his theory of the progress of a language to its advanced state.

11. How does he account for the Figurative style of Language and the Seeming Paradox that Poetry is more ancient than Prose?

12. Illustrate the opinion that "all images drawn from what is beautiful or sublime in the works of nature are *more* beautiful and sublime than images drawn from Art, and are therefore more Poetical."

13. What are Mixed Metaphors, Degrading Metaphors, Historical Metaphors, the Cumulative Metaphorical Style and the Cumulative Confused Metaphorical Style?

14. Upon what principle or principles does the Ludicrous in composition depend for its effect?

15. Discuss the conditions under which the Ludicrous in composition is to be allowed or condemned.

B.A. ORDINARY EXAMINATION.

ENGLISH LITERATURE.

Chaucer:—*The Prologue to the Canterbury Tales.*

WEDNESDAY, APRIL 6TH:—MORNING, 9 TO 12.

Examiners, ... { CHAS. E. MOYSE, B.A.
REV. PROF. MCQUARRIE, B.A.

1. Describe the social condition of England in Chaucer's time, and show that the *Prologue* faithfully reflects it in some particulars.

2. To what influences was Chaucer successively subject? Name works in which these influences are seen.

3. Describe two of those works in detail.

4. Translate into Chaucer's English:—And little birds, which sleep all night with open eye, make melody; It concerned her to put on a courtly face and to be stately in deportment; To fasten his hood under his chin, he had a curious pin made of gold; He wished the sea were guarded on any condition; The cause and theroot of its harm known, at once he gave the sick man its remedy; He loved God best with his whole heart, whether he was in pleasure or pain; And yet this Maunciple got the better of them all; Whoever has to tell a tale after anybody must rehearse, as nearly as possible, every single word.

Say where the lines occur, and comment on the alterations you have made.

5. Describe the Reeve.

6. Summarize the differences between Chaucerian and Modern English in regard to (*a*) nouns, (*b*) pronouns, (*c*) verbs (include *be* and *wit*).

7. Explain Chaucer's metre (*Prologue*) and scansion. Write ten line and scan them.

8. Comment on nas, halwes, Tabard, ale-stake, habergeoun, lovyere, nightyngale, wastel breed, Seint Beneyt, steepe, stewe, rouncy, haunts golyardeys, burdoun, vernicle, sarceflem.

Say, when you can, where the words are to be found.

9. Assign events of Chaucer's life to the following dates: 1340, 1367, 1374, 1386, 1394.

B.A. ORDINARY EXAMINATION.

ENGLISH LITERATURE.

Shakespeare :—*Hamlet;* Hallam *Introduction to the Literature of Europe.*

WEDNESDAY, APRIL 6TH :—AFTERNOON, 2 TO 5.30.

Examiners,..... { CHAS. E. MOYSE, B.A. / REV. PROF. MCQUARRIE, B.A.

1. In Act I, Sc. I. what passes between Marcellus, Bernardo and Horatio while the ghost is present ?

2. Give the substance of Polonius's advice to his son Laertes. (Act I. Sc. III.)

3. Six progressive soliloquies of Hamlet commence thus :—

(*a*) O, that this too too solid flesh would melt.

(*b*) O all you host of heaven! O earth! What else ?
And shall I couple hell ? O, fie! Hold, hold my heart.

(*c*) O, what a rogue and peasant slave am I!
Is it not monstrous that this player here,.....

(*d*) To be or not to be : that is the question :

(*e*) Now might I do it pat, now he is praying ;

(*f*) How all occasions do inform against me,
And spur my dull revenge!

Reproduce their matter, and make a few comments on them as a whole.

4. What parts do the following persons play, Voltimand, *Two Clowns*, *Ophelia*. Unfold the characters of those in italics.

5. Write a brief criticism of *Hamlet*.

6. Mention the main differences between Shakespearian and Modern English, taking your examples from *Hamlet*.

7. Make a note on the moist star, *it* head, unhousel'd, cracked within the ring, mobled, Provincial roses, razed shoes, paddock, sliver, loggats.

8. What does Hallam say regarding Sir Thomas Wyatt and Henry Howard, Earl of Surrey ?

9. What works of the following authors does Hallam mention ? Thomas Sackville, George Gascoyne, Edward Fairfax, John Harrington, Christopher Marlowe, George Puttenham, John Selden, Richard Bentley.

10. State Hallam's leading remarks concerning *Paradise Lost*.

11. What does Hallam think of Hobbes, Cowley, Evelyn, Dryden and Locke in regard to *style ?* Mention two leading points of Locke's philosophy.

B.A. ORDINARY EXAMINATION.

HISTORY OF ENGLAND.

WEDNESDAY, APRIL 20TH:—MORNING, 9 TO 12.

Examiners,..... ..... { CHAS. E. MOYSE, B.A. / REV. PROF. MCQUARRIE, B.A.

1. Relate the history of Christianity in England from the time of Augustine to the accession of Alfred.

2. Give the substance of Mr. Green's sketch of the reign of Henry II.

3. Narrate the origin and the course of the conquest of Scotland by Edward I. and the Scotch War of Independence in the reigns of Edward II. and Edward III.

4. Tell the story of the Peasant revolt of 1381.

5. "The ten years which follow the fall of Wolsey are among the most momentous in our history." Make a summary of their events.

6. Sketch the leading feature of the relations between England and Ireland from the reign of John to that of James I.

7. Describe the rise and progress of Science during the latter half of the Seventeenth Century.

8. Make a few notes on Penda, Dunstan, Roger Bacon, Archbishop Scrope, Thomas Cromwell, Walter Raleigh, Robert Walpole, Charles James Fox, George Canning, Robert Peel.

9. Mention as briefly as possible the chief events between the years 1600-1621, 1700-1720, 1800-1815, and give Green's account of any one *or* of any connected series.

10. The date, cause, and result of the following battles: Gerberoi, Bouvines, Lincoln (two), Navarette, Pinkie, Naseby, Killiecrankie, Bunker's Hill, Navarino, Inkermann.

EXAMINATIONS FOR HONOURS IN ENGLISH.

THIRD YEAR.

MODERN HISTORY.

Hallam.—*Middle Ages, Caps.* 1, 3, 5, 9.

SATURDAY, APRIL 16TH:—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Give an account of the exploits of Charlemagne, and of his character.

2. Relate the history of the Crusades.

3. Group the republics of Italy, and say which party, Guelf or Ghibelin, each group espoused.

4. Sketch the polity of Florence in the thirteenth century, and give an account of the power and the possessions of Pisa prior to her overthrow by Florence. Of what battle was that the outcome?

5. Recount what you know of the history of Genoa or of Venice.

6. Tell the story of the rise and the downfall of the Medici.

7. Mention the leading facts of the history of Switzerland prior to the peace of Westphalia.

8. Trace the rise of sects in Europe hostile to Rome.

9. Describe the Classical Renascence in Europe.

———

Macaulay.—*History of England, Vol. I.*, Cap. 1st.—Milton.—*Areopagitica.*

SATURDAY, APRIL 16TH:—AFTERNOON, 2 to 5.

Examiner,.....CHAS. E. MOYSE, B.A.

I. What does Macaulay say in regard to:—

(*a*) The Normans.

(*b*) The Norman Conquest and its effects previous to the amalgamation of races.

(*c*) The prerogatives of the early English Kings, and their limitations.

(*d*) Scotland and Ireland "before they became parts of the same Empire with England" (1603).

(*e*) The domination and character of Cromwell's army.

(*f*) The protectorate of Oliver Cromwell.

II. What remarks does Milton make concerning:—

(*a*) The books condemned by the Greeks and Romans.

(*b*) Dionysius Alexandrinus.

(*c*) The qualifications of a licenser.

(*d*) The English nation and London.

(*e*) The error in supposing that the freedom of the press promotes Schism.

———

EARLY ENGLISH.

FRIDAY, APRIL 22ND:—MORNING, 9 TO 12.30.

Examiner, ... CHAS. E. MOYSE, B.A.

1. Translate:—

A. Robert of Gloucester.—*Reign of William the Conqueror.*

Thulke festes he wolde holde so nobeliche
.....
That word into Normandie to King William com.

B. *The Proverbs of Hendyng.*

Me may lere a sely fode.
.....
Gredy is the godles.

C. *Parable of the Labourers.*

Of a mon Matheu thohte
.....
Ant gonne is loue forlete.

D. Richard Rolle De Hampole.—*Pricke of Conscience.*

Bot I wille show yhow a party
.....
And neuer mare wynter in that contre.

II. 1. In what dialects are the poems you have been translating written? Point out in the extracts as many dialectic words as you can.

2. Comment on these words; *arskes; barme; clom; dereyne; edwit este; feye; goderhele; heremyde; mensk; quain; swik; watloker.*

3. Give Chaucer's description of the Monk. Notice the Early English inflections you meet with there, and explain them.

4. In what particulars does Chaucer's *Knightes Tale* differ from Boccaccio's *Teseide?*

5. Give an account of the preparations for the last fight in the *Knightes Tale*, and the course of the combat.

ANGLO-SAXON.

MONDAY, APRIL 25TH:—MORNING, 9 TO 12.

Examiner, ... CHAS. E. MOYSE, B.A.

I. Translate:

A (1) The Gospels—Matthew xiv. 24-30.

(2) Ælfric's Homilies.

(*a*) Eft cwæth se apostol Johannes.....
Gemæne tham rican and tham heanan.

(*b*) Hit gelamp æt Sumum sæle.....and mid fulluhte gehalgode.

B [Extract not previously read—Alfred's Bœthius.]

Hit gelamp gio thætte.....ágeáfan eft his wif.

II. *Questions on the Extracts.*

1. State the gender and give the nom. and gen. singular and the nom. plural of each noun in the extracts (*a*) and (*b*).

2. Give the principal parts of the verbs in the extracts (*a*) and (*b*).

3. Hláford, etymology? mann and mán, difference? sceafmælum, note; heofenlic, decline; forluron, the meaning of *for?* ac and ác, difference? faran, derivatives? mæg and mæg, difference? mónan, root?

III. *Grammar.*

1. Decline scip., til (all genders), hwæt (all genders), ic, he, se.

2. Name Anglo-Saxon prepositions and the cases they govern.

3. Give the chief rules for the use of the subjunctive in Anglo-Saxon.

IV. *Literature.*

1. Make a few remarks concerning the nature and scope of Anglo-Saxon Literature.

2. Give an outline of Beówulf.

3. What do you know concerning Cynewulf, Adámnan, Aldhelm?

ENGLISH LITERATURE.

Spenser.—*The Faerie Queene*, bk. i.; Wordsworth.—*Prelude.*

TUESDAY, APRIL 26TH:—MORNING, 9 TO 12.30.

Examiner,.....CHAS. E. MOYSE, B.A.,

1. Canto II., stanza 28, commences thus:—

> "Long time they thus together traveiled
> Till, weary of their way, they came at last,
> Where grew two goodly trees"—

Give the substance of the remainder of the canto.

2. Describe Duessa's Coach and its attendants.

3. Analyse the canto which tells how

> "The Redcrosse Knight is captive made
> By gyaunt proud opprest," etc.

4. Explain the words *agraste*, *bowrs*, *darrayne*, *emboss*, *mister*, *stye*, *tripicity*, *warrayd*, *wonne*, *yede*.

5. State the salient points of the development of the Prelude.

6. What does Wordsworth say regarding

(*a*) "Home amusements by the warm peat fire
At evening."

(*b*) His visit to his home to spend the first Summer vacation.

(*c*) His dream ("I saw before me stretched a boundless plain").

(*d*) Coleridge's student days.

(*e*) The sights of London.

(*f*) A foxglove and a "smooth rock wet."

State a few cardinal points in Books XII. and XIII.
("Imagination and Taste, how impaired and restored.")

ENGLISH LITERATURE.

Milton.—*L'Allegro*, *Il Penseroso*, *Arcades*, *Comus*, *Lycidas*.
Dryden.—*Annus Mirabilis*, *Hind and Panther*, *Absalom and Achitophel*.

TUESDAY, APRIL 26TH:—AFTERNOON, 2 TO 5.

Examiner,..... .....CHAS. E. MOYSE, B.A.

1. What does Milton say in *L'Allegro* and *Il Penseroso* regarding Queen Mab, Orpheus, Cassiope, Greek tragedy, Chaucer?

2. Reproduce the argument between the two brothers in *Comus*, just previous to the appearance of the Attendant Spirit. (*b*) Explain the meaning of *thatcht* pallet, all *to*-ruffled, *infamous* hills, night *foundered-budge* doctors.

3. What led to the writing of *Lycidas*? Explain the title and the construction of the poem.

(*a*) "Fame is the spur that the clear spirit doth raise."

(*b*) "Last came and last did go
The pilot of the Galilean lake."

(*c*) "Weep no more, woful shepherds, weep no more."
Continue each of the subjects which follow these lines to its conclusion

4. What does Dryden say in *Annus Mirabilis* concerning (*a*) the attempt at Burghen, (*b*) the "Loyal London," (*c*) Holmes and his exploits, (*d*), the King's prayer?

5. What occasion gave rise to the writing of *Absalom and Achitophel?* What argument did Achitophel advance to rouse Absalom to action? Absalom's reply?

b) Who were Agag, Annabel, Balak, Barzillai, *Corah*, Saul, *Zimri?* Give Dryden's estimate of the characters of those underlined.

6. "Thus of three marks which in the creed we view,
Not one of all can be applied to you;
Much less the fourth."
Name these marks, and state Dryden's reasoning concerning them.

7. Tell the story of the Martin in Part III.

B. A. HONOURS IN ENGLISH.

HISTORY OF ENGLAND.

Hallam.—*Constitutional History, caps. i, v. to xiv.* Macaulay.—*History of England, vol. i., caps ii. and iii.*

WEDNESDAY, MARCH 30TH:—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Notice the chief exactions of Henry VII. and of Henry VIII.

2. Mention such parliamentary impeachments during the reign of James I. as Hallam deems noteworthy, and state the grounds of each.

3. Explain, (*a*) Prynne's case, (*b*) the Treaty of Newport.

4. Sketch the Constitutional History of England from 1653 to 1660.

5. Discuss the opposition between Lords and Commons as seen in, (*a*) Skinner's case, (*b*) Shirley case, (*c*) Money Bills.

6. Comment on the "justice and necessity" of the Revolution and the "unusual combination of favouring circumstances" attending it.

7. Give Macaulay's account of, or opinions in regard to,

(*a*) The causes of the unpopularity of the Puritans at the Restoration.

(*a*) The Cabal, (*b*) the condition of the clergy in the time of Charles II.

(*a*) The condition of the Navy of Charles II. (*b*) Travelling in the time of Charles II.

ANGLO-SAXON.

SATURDAY, APRIL 9TH:—MORNING, 9 TO 12-30.

Examiner, ... CHAS. E. MOYSE, B.A.

I. Translate :—

A. Alfred's *Translation of Bœthius:*
Hit gelamp giô..... ælces monnes wyrde.

B. Alfred's *Beda.* Account of Cædmon.
Wæs hé se monn..... Freá Ælmihtig.

C. *Béowulf.*
1. Beowulf mathelode..... deáth nimeth.
2. Ne nom hé in thæm wicum.... weras onsâwon.

D. *Cædmon.*
Hé hæfth nu gemearcod..... fæstum clommum.

E. *The Phœnix.*
Thæt is wynsum wong..... under heofontunglum.

II. 1. Give the principal parts of the *Strong* verbs of C and the genders of the nouns of A.

2. Comment on ten words in A C which are philologically interesting.

III. (Extracts not previously read.)

A. Alfred's *Translation of Orosius.*
Heora twa wæron heora cwêna.. on mægthhâde.

B. Ælfric. *The Nativity of the Innocents.*
Efne thâ Godes Engel..... ealle forwurdon.

EARLY ENGLISH.

SATURDAY, APRIL 9TH:—AFTERNOON, 2.30 TO 5.

Examiner, ... CHAS. E. MOYSE, B.A.

I. Translate :—

A. *William of Palerne.*
Whan William this worthi child ..... bestow neuere.

B. "*The Destruction of Sodom.*"
Suche a rothun of a reche..... those ledes.

C. "*Piers the Plowman.*" *Passus I.*
That on clothing is..... holden to-gedere.

D. John Barbour, *The Bruce*, book vii.

The King has furth his wayis tane.....
On this viss spak schir Amery.

II. 1. Name the dialects in which the above extracts are written and select dialectic test-words.

2. Comment on ragemon, A bord upset, kete.

ENGLISH LITERATURE.

Pope.—*An Essay on Criticism.* Cowper.—The *Task*, *book* ii.

THURSDAY, APRIL 14TH :—MORNING, 9 TO 1.

1. Continue the argument of :—

(*a*) You then, whose judgment the right course would steer
Know well each ancient's proper character.

(*b*) A little learning is a dangerous thing.

(*c*) But most by numbers judge a poet's song;
And smooth or rough with them is right or wrong.

(*d*) Such once were critics; such the happy few
Athens and Rome in better ages knew.

2. Write a criticism of the *Essay* in regard to, (*a*) its conformity with the thought of its time, (*b*) its form and style.

3. Describe, in Cowper's language when you can, (*a*) the state of Sicily and the conclusions drawn therefrom, (*b*) the incentives to patriotism, (*c*) the pleasure of poetical composition, (*d*) the pulpit, its use and abuse, (*e*) Discipline.

4. Contrast *An Essay on Criticism* and *The Task*, bk. ii., in regard to such points as you think noteworthy.

5. Give the contexts of :—

(*a*) Slaves cannot breathe in England.

(*b*) Variety's the very spice of life.

(*c*) Words are like leaves.

(*d*) When Ajax strives some rocks vast weight to throw.

(*e*) Most authors steal their works or buy.

ENGLISH LITERATURE.

Milton.—*Shorter Poems*; Dryden.—*Annus Mirabilis*, *Absalom and Achitophel*.

THURSDAY, APRIL 14TH:—AFTERNOON, 2 TO 6.

Examiner,.....CHARLES E. MOYSE, B.A.

1. What relation does *L'Allegro* bear to *Il Penseroso?* Show that relation by quoting from the poems, and also point out in them a few signs in regard to Milton's education.

2. Write out a brief essay on the construction and the merits of *Arcades*.

3. What caused the writing of *Comus* and *Lycidas?*

4. Trace the history of the character Comus. To what earlier writings may Milton have been indebted for incidents in *Comus?* Repeat the substance of the arguments between Comus and The Lady.

5. Explain and indicate the construction of *Lycidas*. Notice a few of its abused epithets.

6. What noteworthy points does Dryden mention in his preface to *Annus Mirabilis?* Give a brief outline of the poem, and note Euphuistic Expressions.

7. What does Dryden make Absalom say to the people?

8. The names and characters of those who helped "righteous David"?

9. Quote from *Absalom* and *Achitophel* any six disconnected lines which have become famous.

B.A. AND THIRD YEAR.

THE CONSTITUTIONAL HISTORY OF ENGLAND.

TUESDAY, APRIL 19TH:—MORNING, 9 TO 1.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Explain the terms *comitatus*, *princeps*, *mark*, *odal*, *heretoga*, *ealdorman*, *fyrd*, *theow*, *esne*, *ing* (suffix), *communio*.

2. Mention noteworthy points regarding the nature of the Teutonic migration to England, and its chief constitional results.

3. Explain the polity of the township, the hundred, the shire. What relation does the *burh* bear to the first of these?

4. Give a detailed account of the Imperial policy of William the Conqueror.

5. Describe the nature of Feudalism, and show how far it existed in England previous to the Norman Conquest.

6. "The great officers of the household form the first circle round the (Anglo-Norman) throne." *Stubbs.* Their names and duties?

7. What formed the second circle? The various classes of its members? The duties of the whole body?

8. Unfold the constitutional relations and the business of the King's Court and Exchequer.

9. Explain the nature of Gilds.

---

10. "During the long and prosperous reign of Edward III. the efforts of Parliament.....were rewarded with success in establishing.....three essential principles." Amplify and prove in detail this statement of Hallam.

11. Reproduce the substance of Hallam's account of the constitutional history of Richard the Second's reign.

ENGLISH LITERATURE.

Shelley.—*The Cenci*; Keats.—*Endymion, Hyperion.*

FRIDAY, APRIL, 22ND:—AFTERNOON, 2 TO 5.

Examiner, ...CHAS. E. MOYSE, B.A.

1. Relate such particulars concerning Shelley's early life as throw light on the growth of his mind.

2. Give the substance of the various conversations between Beatrice and Orsino.

3. Carefully unfold and contrast the characters of Beatrice and Count Cenci.

4. Point out the artistic excellence of the dialogue between Giacomo and Orsino in Act III. Sc. II., beginning thus:

Ors. I am come to say he has escaped.
Gic. Escaped!

5 What proofs can you produce from *The Cenci* that Shelley possessed high tragic power.

6. What are the characteristics of Keats as a poet?

7. Tell the story of Hyperion, and give the outline of Keats's poem.

ENGLISH LITERATURE.

Shakespeare.—*Love's Labour's Lost, A Midsummer Night's Dream, The Tempest.*

MONDAY, APRIL 25TH :—MORNING, 9 TO 1.

Examiner,.....CHAS. E. MOYSE, B.A

1. Discuss the language and versification of *Love's Labour's Lost*. Quote in substantiation of your assertions.

2. Give an outline of

(*a*) Act I., Sc. I., previous to the entry of Dull and Costard.

(*b*) The last scene after "enter Mercade."

(*c*) Don Adriano de Armado's letter to Jaquenetta.

3. Criticise in general terms *A Midsummer Night's Dream.*

4. (*a*) What portions of *A Midsummer Night's Dream* have historical significance. Explain them.

(*b*) Unfold the character (1) of Oberon, (2) of Titania. Give the substance of Titania's speech beginning,

"These are the forgeries of jealousy."

(*c*) What parts do the four lovers play?

5. What do you consider to be the lesson taught by *The Tempest?*

6. (*a*) Write a brief essay on (1) Prospero, (2) Caliban.

(*b*) Give an analysis of the first scene in which Caliban, Trinculo and Stephano take part.

(*c*) Relate the substance of the dialogues between Ferdinand and Miranda.

(*d*) Describe the development and course of the two conspiracies.

7. Explain: yare; the *still-vexed* Bermoothes; thatch'd with *stover;* The hobby-horse is forgot; no *egma;* old Mantuan; Hold or cut bow-strings; lob; rere-mice; a Bergomask dance.

ENGLISH LITERATURE.

Ben Jonson.—*Every Man out of his Humour;* Spenser.—*The Faerie Queene,* Book I.

MONDAY, APRIL 25TH :—AFTERNOON, 2 TO 5.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Use the preface to Ben Jonson's play to explain the title. To what body is the play dedicated? Who act the part of chorus?

2. What characters does Ben Jonson assign to Macilente and Deliro?

3. What takes place in the Middle Aisle of St. Paul's? (Act III., Sc. I.

4. From your knowledge of the play describe the various fashions of the time.

5. Unfold the general plan of *The Faerie Queene.*

6. Give an analysis of the canto of which these lines are explanatory:—

> Her faithful Knight faire Una brings
> To house of Holinesse,
> Where he is taught repentance and
> The way to heavenly blisse.

7. Notice and explain remarkable words in Spenser's First Book. To what authors was Spenser indebted both for idea and phrase? Exemplify.

LOGIC AND MENTAL AND MORAL PHILOSOPHY.

INTERMEDIATE EXAMINATION.

JEVONS' LOGIC.

WEDNESDAY, APRIL 20TH :—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Define Logic, explaining the etymology of the name.

2. Distinguish Collective and General Terms, giving an example of each.

3. Among the following terms select those that are Abstract, Negative, or Connotative:—Metropolis, Ottawa, Indivisible, Indivisibility, Infinitude, Queen, Cleopatra, Cicero, Orator, Oratory, Light, Dark.

4. (*a*) Distinguish the Extension and Intension of a term. (*b*) Explain the law of their relation.

5. Distinguish Subject, Predicate, and Copula in the following propositions:—

(*a*) Not many of the metals are brittle;
(*b*) Not a man was saved from the wreck;
(*c*) It is a poor ambition to be a money-making machine;
(*d*) Every mistake is not culpable.

6. Give the sign for each of the propositions under the previous question.

7. State the several opposites of each of these propositions.

8. Point out the several terms and propositions in the following syllogism:—"Singular propositions, since they apply to the whole of their subjects, are universal; for all propositions are universal which apply to the whole of their subjects."

9. Point out what Rule of the Syllogism is violated in each of the following arguments:—

(*a*) As everything is governed by uniform law that is produced by mere physical force, Nature is produced by mere physical force, for it is governed by uniform law.

(*b*) All Christian people should be encouraged to settle in this country; and therefore the Chinese should not be encouraged to settle here, as they are not Christians.

10. (*a*) Name the Moods of the Second Figure, and (*b*) explain the significant letters in the names.

11. Complete the Enthymeme:—"Blessed are the merciful, for they shall obtain mercy."

12. Discuss the legitimacy of the following arguments:—

(*a*) If men always knew what is for their good, democracy would be the best form of government, but, as they do not always know that, democracy is not the best form of government.

(*b*) If duties are imposed on the necessaries of life, their prices will rise; but the prices will not rise, as no duties have been imposed.

13. (*a*) Distinguish Logical and Material Fallacies, and (*b*) mention the most common forms of each.

14. Explain the Fallacy involved in each of the following examples:—

(*a*) Speculative men are unfit to be trusted. Philosophers are speculative men, and therefore unfit to be trusted.

(*b*) Every producer is enriched by obtaining a monopoly of his productions; and therefore all the producers in a country will be enriched by obtaining similar monopolies.

(*c*) No case: abuse the plaintiff's attorney.

——

THIRD YEAR.

MORAL PHILOSOPHY.

WEDNESDAY, APRIL 6TH :—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Define the sphere of Ethics proper.

2. Distinguish the main tendencies of speculation in reference to the rightness of actions.

3. Distinguish the various forms of the theory which makes the rightness of an action consist in its power of giving pleasure.

4. (*a*) Explain the ambiguity of the statement, that pleasure is the only desirable object in human life. (*b*) Discuss the questions, whether this statement accords with experience, and whether, if it did accord with experience, it would solve the problem of Ethics.

5. (*a*) Explain the origin of the name *Stoic*. (*b*) Who was the founder of the Stoical school? (*c*) About what time did the school originate?

6. (*a*) Distinguish Hypothetical and Categorical Imperatives. (*b*) State and explain the Categorical Imperative in which Kant expressed the Moral Law.

7. Distinguish (*a*) Social and Personal Duties, (*b*) the two subdivisions of Social Duties. (*c*) What objection is there to recognizing a separate division of duties to God? (*d*) What place should be assigned to the duties so called?

8. Classify the duties of the Individual to the State.

9. (*a*) What are Real Rights; (*b*) what, their objects? (*c*) How are these rights acquired; (*d*) how, transferred?

10. Explain the place and moral value of the Duties of Courtesy in a Moral Code.

11. Exhibit the tendency of the Moral Consciousness to pass over into the Religious Consciousness.

12. (*a*) Explain the nature of Virtue. (*b*) State the practical rules for its culture, suggested by its nature.

B. A. ORDINARY EXAMINATION.

MENTAL AND MORAL PHILOSOPHY.

(*Murray's Outline of Hamilton's Philosophy.*)

FRIDAY, APRIL 1ST:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D

1. "Man is the measure of all things." (*a*) Who is the author of this saying? (*b*) Explain its meaning.

2. Explain the terms Subject and Object.

3. (*a*) What is the evidence on which all philosophy must ultimately rest? (*b*) Distinguish two aspects in which that evidence may be viewed. (*c*) In which of these aspects alone is doubt possible?

4. Explain Hamilton's classification of the Cognitive Faculties.

5. Illustrate the relation of Sensation and Perception by comparing (*a*) the several senses, (*b*) the several impressions of the same sense.

6. Compare the different qualities of matter from the point of view (*a*) of Sense, (*b*) of Understanding.

7. State the various theories which result from accepting or rejecting the Duality of Consciousness.

8. By what hypothesis does Hamilton explain the retention of cognitions while we are not conscious of them?

9. (*a*) What are the three sources of Reproduction? (*b*) State the Laws corresponding to these.

10. Explain (*a*) the function of the Elaborative Faculty, (*b*) the processes of Abstraction and Generalisation, (*c*) the question of the Primum Cognitum.

11. (*a*) Distinguish the Infinite and the Absolute, and (*b*) state the Law of the Conditioned.

12. Illustrate the Law of the Conditioned in reference to Intensive Quantity.

B. A. ORDINARY EXAMINATION.

MENTAL AND MORAL PHILOSOPHY.

(Calderwood's Handbook of Moral Philosophy.)

MONDAY, APRIL 4TH:—MORNING, 9 TO 12.

Examiner, ...J. CLARK MURRAY, LL.D.

1. State the etymology of the terms *Ethics* and *Morals*.

2. Explain what constitutes the moral quality of an action.

3. Show that knowledge of moral qualities is of the nature of a judgment.

4. "The first principles of morals are not inductions from experience." Explain and illustrate by the difference between the judgment that honesty is right, and the judgment that honesty is the best policy.

5. (*a*) Distinguish Perfect and Imperfect Obligations; and (*b*) explain the ethical, the juridical, and the transcendental uses of the distinction.

6. Criticise Utilitarianism (*a*) as a theory of life, (*b*) as a theory o morals.

7. State and criticise Professor Bain's theory of Conscience.

8. State and criticise Mr. J. S. Mill's account of Moral Obligation, pointing out his confusion between sanction and motive, between obligation and obedience.

9. Explain Calderwood's classification of Impulses to Action.

10. Explain the relation of Will to Intelligence on the one hand, to Desires and Affections on the other.

11. Give an exposition and criticism of Necessitarianism.

12. State the various theories propounded in explanation of the order of things in which we exist.

B. A. HONOUR EXAMINATION.

MENTAL AND MORAL PHILOSOPHY.

Kant's critique of Pure Reason.

WEDNESDAY, MARCH 30TH:—MORNING, 9 TO 12.

Examiner, ...J. CLARK MURRAY, LL.D.

1. Define cognitions (*a*) *a priori*, (*b*) absolutely *a priori*, (*c*) Pure, (*d*) Transcendental.

2. "How are synthetic judgments *a priori* possible?" Explain the meaning of this question, and its bearing on the Critique.

3. Explain, in general, how this question is answered in the first part of the Transcendental Doctrine of Elements.

4. Explain (*a*) the idea, (*b*) the divisions, of a Transcendental Logic.

5. (*a*) In a Deduction of the Categories distinguish the *quaestio facti* from the *quaestio juris*. (*b*) Which is the question in a Transcendental Deduction? (*c*) Explain the general drift of such a Deduction.

6. (*a*) Explain the process by which the Principles of the Pure Understanding are derived from the Categories. (*b*) Name the Principles which correspond to each class of Categories.

7. Explain Kant's account of the four old principles: "In mundo non datur hiatus, non datur saltus, non datur casus, non datur fatum."

8. (*a*) Explain Kant's use of the term Idea, comparing it with Plato's. (*b*) How are Ideas formed?

9. (*a*) Give the system of Cosmological Ideas, and (*b*) state the Antinomy founded on each.

10. Sketch, in general outline, the solution of the Antinomy of Pure Reason.

11. Discuss the conclusiveness of the Physico-theological Argument for the existence of God.

12. Explain the use of the Ideas of Pure Reason.

MILL'S LOGIC.

WEDNESDAY, APRIL 20TH:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D

1. (*a*) Explain Mill's doctrine of the meaning of Names. (*b*) Compare it with his doctrine as to what Nameable Things ultimately are.

2. (*a*) Distinguish the five Predicables. (*b*) Explain how there may be one differentia for general purposes, and others for special purposes.

3. State Mill's theory of the functions and logical value of the Syllogism.

4. Explain Mill's theory of the Definitions and Axioms of Geometry.

5. Explain the Joint Method of Agreement and Difference, distinguishing it from the simple Method of Difference.

6. Suppose previous inductions have shown that A is the cause a, and B the cause of b. A new compound phenomenon, $A\ B\ C$, is now found to be followed by another, $a\ b\ c$. What inference may be drawn, and by what method?

7. If the retinal magnitude of a visible object is increased, its apparent distance is diminished; and if the retinal magnitude is diminished, the apparent distance is increased. What inference may be drawn from this fact, and by what method?

8. What is the limit to the explanation of the Laws of Nature?

9. (*a*) Define an Empirical Law in its wider and in its narrower sense, (*b*) By what signs may any uniformity be presumed to be resolvable?

10. Explain Mill's classification of the Fallacies.

11. Explain Mill's objection to the use of the term Necessity in reference to human actions.

12. Show that in Social Science (*a*) the Method of Difference is inapplicable, (*b*) the Methods of Agreement and of Concomitant Variations are inconclusive, (*c*) the Method of Residues presupposes Deduction.

13. (*a*) What Method is alone applicable to Social Science? (*b*) Distinguish its two forms. (*c*) Which of these is the one proper to Social Science? (*d*) Explain the reason.

PLATO'S REPUBLIC.

THURSDAY, APRIL 7TH :—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Describe the interlocutors in the dialogue, and the general position taken by each.

2. (*a*) What is the saying of Simonides referred to near the opening of the dialogue? (*b*) Sketch Socrates' criticism of the saying.

3. State the general theory of Justice combated by Socrates in the first two books.

4. What sort of poetry, music, and gymnastics does Plato allow to the Guardians of the State?

5. (*a*) What is meant by a "noble falsehood"? (*b*) Compare it with the "pious frauds" of later times.

6. Sketch the main features of the communism of Plato.

7. Sketch Plato's discussion of the objections to men and women engaging in the same occupations.

8. Explain (*a*) the statement that rulers should be philosophers, and (*b*) the reason why the statement seems ridiculous to the ordinary mind.

9. Describe the course and the forms of degeneration in Government.

10. Sketch the discussion of the question, whether the unjust man can be called truly happy.

11. Describe the vision of Er, and the purpose for which it is introduced.

HISTORY OF MODERN PHILOSOPHY.

WEDNESDAY, APRIL 13TH :—MORNING, 9 TO 12.

Examiner,..... .....J. CLARK MURRAY, LL.D.

1. Describe (*a*) the two antagonistic tendencies of modern speculation, (*b*) the leading stages of their development.

2. Name the chief representatives, both philosophical and popular, of Empiricism previous to Locke.

3. (*a*) Explain the basis, both historical and philosophical, of Hobbes' political Absolutism. (*b*) Mention any other manifestations of the same speculative tendency.

4. State, in general, (*a*) Locke's classification of ideas, (*b*) his account of their origin or formation.

5. Explain (*a*) Locke's account of the ideas of Substance and Cause, (*b*) its development by Hume.

6. Explain (*a*) Descartes' theory of error, (*b*) his criterion of truth, (*c*) the course of reasoning by which this criterion is reached.

7. Explain (*a*) the Cartesian definition of Substance, (*b*) the development of the definition in Spinoza's system.

8. Sketch the salient points in the philosophy of Leibnitz.

9. (*a*) Contrast the French Illumination with the German. (*b*) Mention the principal writers representative of each.

10. Explain the relation of Kant's three critiques.

McGILL UNIVERSITY, MONTREAL.

B. A. EXAMINATIONS, 1881.

HONOURS IN MENTAL AND MORAL PHILOSOPHY.

KANT'S THEORY OF ETHICS.

THURSDAY, 21ST APRIL :—MORNING, 9 TO 12.

Examiner, ...J. CLARK MURRAY, LL.D.

1. What is meant by a *Critique of Pure Practical Reason?*

2. From what does an action receive its moral worth?

3. Distinguish popular moral philosophy from the metaphysic of morals.

4. How do the objective laws of reason assume the form of an obligation?

5. (*a*) Define an Imperative. (*b*) Distinguish the different kinds of Imperatives.

6. State and illustrate the Categorical Imperative.

7. Illustrate by an example how the Categorical Imperative may also be stated in the formula:—"So act as to treat humanity, whether in thine own person or in that of any other, in every case as an end withal, never as a means only."

8. How can man be in one sense free, in another, subject to the laws of nature?

9. Sketch in outline the Dialectic of Pure Practical Reason.

10. What is the method of moral culture prescribed by Pure Practical Reason?

11. What is meant by saying that man is bad by nature?

12. Distinguish the rational and the temporal origin of evil.

THIRD YEAR AND B. A. EXAMINATIONS.

FRIDAY, 22ND APRIL:—MORNING, 9 TO 12.

Examiner, ...J. CLARK MURRAY, LL.D.

1. Define an Adequate Notion, illustrating by Hobbes' definition of Right as "unresistible might in a state of nature."

2. Distinguish (*a*) Intuitions and Conceptions, (*b*) the different steps in the formation of a Conception.

3. Distinguish the meanings in Extension and Intension of the terms, Quadruped, Man, Mountain, Canadian, River, Stoic.

4. What rule of Definition is violated in each of the following Definitions?

(*a*) Poetry is the flower of human thought;

(*b*) Evil is the opposite of good;

(*c*) Life is the state of an organized being before total and permanent cessation of the vital functions.

5. Explain Realism and Nominalism with their modifications.

6. Give the symbol for each of the following propositions, stating its quantity, quality, and relation:—

(*a*) Fame is no plant that grows on mortal soil;

(*b*) Quadrupeds are vertebrate animals;

(*c*) Quadrupeds are fourfooted animals;

(*d*) Some words are negative terms;

(*e*) Some terms are not distinct;

(*f*) Some terms are equivocal.

7. Interpret any two of the propositions under the previous question according to Extension, Intension, and Denomination.

8. Distinguish Explicative and Ampliative Propositions, illustrating the distinction by examples from Question 6.

9. Convert the propositions under Question 6.

10. Explain the following rules:—

(*a*) The *worst* relation of the two terms with a third, that may be established in the premises, shall be expressed in the conclusion;

(*b*) The comparison of each of the two terms must be either with the whole, or with the same part, of the third term.

11. State the Special Canon of each Figure.

12. Show that the different Figures all represent actual processes of reasoning.

13. State the Mood and the Figure of the following argument:—"As nerve-force cannot, while electricity can, travel along a tied nerve, nerve-force cannot be electricity."

14. Define Sorites, Prosyllogism, Episyllogism.

THIRD YEAR AND B. A. EXAMINATIONS.

GREEK PHILOSOPHY.

MONDAY, APRIL 25TH:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. (*a*) State the doctrines of Thales and Anaximander. (*b*) Indicate any points of contact which they show with the old Mythology.

2. (*a*) State what you know of Pythagoras, and name his most famous followers. (*b*) Mention any incidents illustrating the practical application of their principles.

3. Explain the general purport of the doctrine that number is the principle of all things, contrasting it with the doctrine of the Ionic school.

4. Sketch the philosophy of Heracleitus, contrasting it with that of the Eleatics.

5. (*a*) Explain the original meaning and application of the term *Sophist* (*b*) Name the most celebrated Sophists. (*c*) Describe their earlier character and later degeneration.

6. (*a*) Relate the origin of the Cynic school. (*b*) Who were its founder and chief adherents? (*c*) State their ethical doctrine in its fundamental principle and its applications.

7. Describe (*a*) the different periods in the life and literary labours of Plato, (*b*) the different periods in the history of his school.

8. Explain the connection of the Platonic Ethics and Politics.

9. Explain (*a*) the Aristotelian four Causes, (*b*) the reduction of these to two.

10. Explain Aristotle's definition of Virtue.

11. Who were (*a*) the founder of the Stoical school, (*b*) its principal adherents, earlier and later?

12. State (*a*) the criterion of truth, (*b*) the general conception of Nature, (*c*) the consequent conception of the highest good, in the Stoical school.

13. Describe the Physics in relation to the Ethics of the Epicureans.

14. Explain the tendency of ancient Scepticism, showing that originally it was practical, like that of the Stoics and Epicureans.

MODERN LANGUAGES AND HEBREW.

FRENCH.

FIRST YEAR.

TUESDAY, APRIL 12TH :—MORNING, 9 TO 12.

Examiner,.....P. J. DAREY, M.A., B.C.L.

1. Translate into English :—

Dorante.—Oui, madame, vous verrez, (*a*) la plus plaisante chose qu'on puisse, (*b*) voir et je ne crois, (*c*) pas que dans tout le monde, il soit possible de trouver encore un homme aussi fou, (*d*) que celui-là. Et puis madame, il faut tâcher, (*e*) de servir l'amour de Cléante, et d'appuyer, (*f*) toute sa mascarade. C'est un fort, (*g*) galant homme et qui mérite qu'on s'intéresse pour lui. *Orimène.*—J'en fais beaucoup de cas et il est digne d'une bonne fortune. *Dorante*,—Outre cela, nous avons ici, madame, un ballet qui nous revient que nous ne devons pas laisser perdre ; et il faut bien voir si mon idée pourra réussir.

2. Parse those verbs *verrez* and *puisse*. Write also in full the primitive tenses of those verbs. And the *Preterite subjunctive*, the *Past future* of *ne pas s'en aller*, *falloir*, *dire*.

3. *c*, *e*. What difference is there between *crois* and *croîs*, *tâcher* and *tacher*, *repartir* and *répartir* ?

4. *d*, *g*. What is the feminine of fou ? and its adverbe ? Parse *fort*, and say why it is in that part of speech ?

5. *f*. What is the proper meaning of appuyer ? What does it mean here ? What is *a point d'appui* ?

6. Translate and write the plural of *poultry-yard*, *bat*, *maul-stick*, *alarm-clocks*, *a towel* and *sleight of hand*, and explain how those plurals are formed.

7. Write the adverbs formed from the adjectives *traître*, *gentil*, *impuni*, *bref*, *long*, *nouveau*, *précis*, *gai*, *complet*, *résolu*.

8. Translate into French :

Of all those girls she is the most happy. It is at her parents' that she

is the most happy. Explain fully how that superlative *the most* is to be written.

9. Translate into French:

My vine wants cutting. The service that I have rendered him seems to have brought me good luck. The great nightshade originally came from Mexico. He is deaf to remonstrances. A heart free from cares enjoys the greatest felicity possible. The great wall on the north of China is about twelve hundred miles long. The highest mountains are the reservoirs from which issue the largest rivers. Her grandfather is the richest man in London. Corn sells at seven shillings a bushel. I intend to go from France to Switzerland; and from Switzerland to Italy. It is computed that there are in France four hundred towns and forty-three thousand villages. The compass was not invented by a mariner, nor printing by a man of letters, nor gunpowder by a military man.

INTERMEDIATE EXAMINATIONS.

TUESDAY, APRIL 12TH:—MORNING, 9 TO 12.

Examiners,..... { P. J. DAREY, M.A., B.C.L. / PROF. M. MILLER.

1. Translate into English:

Vous voyez comme je m'y prends, et les adroites complaisances qu'il m'a fallu mettre en usage pour m'introduire à son service; sous quel masque de sympathie et de rapports de sentiments je me déguise pour lui plaire, et quel personnage je joue tous les jours avec lui, afin d'acquérir sa tendresse. J'y fais des progrès admirables; et j'éprouve que, pour gagner les hommes, il n'est point de meilleure voie, que de se parer à leurs yeux de leurs inclinations, que de donner dans leurs maximes, encenser leurs défauts, et applaudir à ce qu'ils font. On n'a que faire d'avoir peur de trop charger la complaisance; et la manière dont on les joue a beau être visible, les plus fins toujours sont de grandes dupes du côté de la flatterie: et il n'y a rien de si impertinent et de si ridicule qu'on ne fasse avaler, lorsqu'on l'assaisonne en louanges. La sincérité souffre un peu au métier que je fais; mais, quand on a besoin des hommes, il faut bien s'ajuster à eux; et puisqu'on ne saurait les gagner que par là, ce n'est pas la faute de ceux qui flattent, mais de ceux qui veulent être flattés.

2. Name the irregular verbs in the first sentence of passage above, and write in full the Indicative Present and Future of each.

Narcisse. "Néron s'ils en sont crus, n'est point né pour l'empire,
Il ne dit, il ne fait que ce qu'on lui prescrit:

Burrhus conduit son cœur, Sénèque son esprit.
Pour toute ambition, pour vertu singulière,
Il excelle à conduire un char dans la carrière,
A disputer des prix indignes de ses mains,
A se donner lui-même en spectacle aux Romains,
A venir prodiguer sa voix sur un théâtre,
A réciter des chants qu'il veut qu'on idolâtre
Tandis que des soldats, de moments en moments,
Vont arracher pour lui les applaudissements"
Ah! ne voulez-vous pas les forcer à se taire?

Britannicus, Acte IV, s. IV.

Translate:

Je n'ai que trop de pente à punir son audace.
Au joug, depuis longtemps ils se sont façonnés.
Je vous ai cru tous deux d'intelligence.
D'où vient qu'en m'écoutant, vos yeux, vos tristes yeux
Avec de longs regards se tournent vers les cieux.

3. State the difference between: *chacun* and *chaque*, *parole* and *mot*, *mur* and *mûr*, *sur* and *sûr*, *le parti* and *la partie*, *le mémoire* and *la mémoire*, *eune* and *jeûne*.

4. Mention all the changes which are brought about by the occurrence of e silent in the termination of a verb conjugated.

5. Translate the following sentences, and give the rule which is applied in each of them: 1. We studied ancient and modern history. 2. Our family was occupying the first and second story of this house. 3. The faults of Peter the Great tarnished his great and admirable qualities. 4. Cicero was an orator and Virgil a poet. 5. Socrates was a great philosopher and Apelles a distinguished painter. 6. Good people are not always the most successful in the world. 7. All young people are liable to be mistaken.

6. Write correctly the following Past Particles, and give the rules according which they are to be written:

Les arbres que nos avons *planté* dans cette terre y ont *crû* et *prospéré* Les mauvais temps qu'il a *fait* ne nous ont point *arrêté*. Les personnes que nous avons *vu* tomber se sont *blessé*. Le peu de fortune qu'il a *eu* lui a suffi pour élever sa famille.

7. Translate into *French:* To intrigue or plot. We are connected together in business. He speaks broken French. To rule in a haughty manner; *and in English:* Il ne sait où donner de la tête. Arrêter un jour. Il s'agit de.

8. Point out the difference during the Middle Ages between the poetry south and north of the Loire. By whom and under what circumstances was lyric poetry transplanted from the south to the north of France? Who

cultivated this kind of poetry after him? What space of time intervened between both poets? What has retarded the progress of lyric poetry during this interval?

9. Who was Molière? What are his principal works? Give a sketch of his life. Answer same questions for Racine.

10. Who were the authors of: *Le Cid; l'Institution Chrétienne; le Lutrin; l'Oraison funèbre de Turenne; Athalie; Life of Gargantua and Pantagruel?* When did those authors live?

11. When was the French Academy founded? What do you know about this event? What was the first work done by the Academy, and by whom was it directed?

12. Translate into French:

To know anything we must know its effects; to see men we must see their works, that we may learn what reason has dictated, or passion has incited, and find what are the most powerful motives of action. To judge rightly of the present we must oppose it to the past, for all judgment is comparative, and of the future nothing can be known. The truth is, that no mind is much employed upon the present: recollection and anticipation fill up almost all our moments.....I suppose he discovered in me, through the obscurity of the room, some tokens of amazement and doubt, for, after a short pause, he proceeded thus: "Not to be easily credited, will neither surprise nor offend me: for I am, probably, the first of human beings to whom this trust has been imparted."

—JOHNSON'S *Rasselas.*

THIRD YEAR.

THURSDAY, APRIL 14TH:—MORNING, 9 TO 12.

Examiner,.....P. J. DAREY, M.A., B.C.L

1. Traduisez en anglais:

Léonor. Pourrez-vous quelque chose (*a*) après qu'un père mort
N'a pu (*b*) dans leurs esprits (*c*) allumer de discord?
Car Chimène aisément montre (*d*) par sa conduite
Que la haine aujourd'hui ne fait pas sa poursuite
Elle obtient un combat, et pour son combattant
C'est le premier offert (*e*) qu'elle accepte à l'instant:
Elle n'a point recours à ces mains généreuses (*f*)
Que tant d'exploits fameux rendent si glorieuses
Don Sanche lui suffit, et mérite son choix
Parce qu'il va s'armer pour la première fois.
Elle aime en ce duel son peu d'expérience;
Comme il est sans renom, elle est sans défiance;

Et sa facilité vous doit bien faire voir
Qu'elle cherche un combat qui force son devoir,
Qui livre à son Rodrigue une victoire aisée,
Et l'autorise enfin à paraître apaisée.

Le Cid A. V. s. III.

2. *a.* Que remarquez-vous à propos du genre de quelque chose ?
b. Donnez les temps premitifs de ce verbe.
c. Les esprits de qui ?
d. Que remarquez-vous sur cette construction *aisément montre ?*
e. Par qui offert ?
f. Que signifie ordinairement le mot *généreuse ?* Que vient-il dire ici ?

3. Qui était LÉONOR qui parle dans le morceau ci-dessus ? A qui parle-t-elle ?

4. Quel est l'autre grand poète tragique du XVIIme siècle. Quelles sont ses meilleures tragédies ?

5. Traduisez en français :

MONTREAL, April 14th, 1881.

My Dear Friend,

I beg to acknowledge the receipt of your very kind letter of the 25th ultimo. You were very obliging in giving me all the details about the temperature and the weather in your part of the country, as well as the political news. I should be very glad to have anything interesting to send you; but there is nothing worth speaking of here. We have had the visit of Mr. Blake last week. Of course the Liberals are exultant about his speeches, whilst the Conservatives do not think much of them. One of the papers compared the efforts of one of the speakers to that of a famous enterprising-man who tried to extract sunbeams out of cucumbers. Our City Council has been quite lively in reference to building the revetment wall on the harbour. The Honorable Premier of Quebec wrote a letter stating the amount that the Government would give; the President of the Harbour Commissioners stated his views, and named the amount they were prepared to give. And finally the City had to give $50,000 to finish the revetment wall from the barracks to the city limits, in stone, and not crib-work. The Finance Committee rejected the proposal; the City Council, by a majority of one, sent back the report to the Finance Committee, and at present it appears that the City will contribute the $50,000, and that we shall have the harbour finished in a style which will be a great ornament to the city.

Very truly yours,

* *

THIRD YEAR HONOURS.

THURSDAY, APRIL 21ST :—MORNING 9 TO 1

Examiner, ...P. J. DAREY, M.A., B.C.L.

1. Faites connaître ce qui porta Racine à écrire les *Plaideurs*. A-t-il publié d'autres comédies? Comparez les Plaideurs avec une comédie de Molière, sous le rapport du comique, de la psychologie et du style.

2. Traduisez ces expressions tirées des *Plaideurs* : Un expert est nommé ; nous sommes renvoyés hors de cour ; on poursuit un arrêt ; je m'inscris en faux ; j'y brûlerai mes livres ; grand bien vous fasse ! Et si dans la province il se donnait en tout vingt coups de nerf de bœuf, mon père pour sa part en emboursait dix-neuf ; main-forte ! Vaille que vaille ; pour cette nuit il faut que je m'en donne.

3. Quel auteur ancien Racine a-t-il imité dans *Phèdre*? Quel autre auteur ancien a aussi traité le même sujet. Donnez un résumé du rôle de Phèdre dans cette pièce. Est-ce une pièce morale ou non? Expliquez-vous.

4. Qu'est-ce proprement que l'*Art poétique?* Connaissez-vous dans la littérature classique des poésies du même genre?

5. En combien de parties se divise l'*Art poétique?* Dites ce que renferme chacune de ces parties.

6. Que pensez-vous du style de l'*Art poétique?* Citez-en quelques vers qui ont passé en proverbes.

7. Faites connaître en peu de mots les *Pensées* de Pascal? En quoi diffère la polémique de Bossuet de celle de Pascal dans ses pensées sur la religion.

8. Que trouve-t-on dans les *Caractères* de La Bruyère? Donnez quelques détails biographiques de La Bruyère

9. Qu'est-ce que "*l'honneur et l'argent?*" Qui en est l'auteur? Qu'est-ce que l'auteur a pour objet dans cette pièce? Vers quelle époque a-t-elle été représentée?

10. Traduisez en anglais :

Ce n'est pas impossible, et je veux bien le croire (*a*)
Mais combien en est-il, parmi les mieux famés,
Que l'on verrait encore dignes d'être estimés,
Si passant tout à coup (*b*) du luxe à la misère
Ils étaient dépouillés même du nécessaire.

11. (*a*) Traduisez en anglais les expressions idiomatiques : vous n'avez qu'à vouloir ; quand vous voudrez ; à qui en voulez-vous : c'est à moi que

ces gens en veulent; je veux bien ne pas vous punir cette fois. Je n'en veux pas. Le malheur a voulu que je fusse absent. Veuillez m'écrire demain. (*b*) Quelle différence y a-t-il entre tout à coup et tout d'un coup?

12. Donnez une liste de dix écrivains du premier empire. Dites quels ouvrages ces auteurs ont écrit.

13. Qu'a-t-on appelé langue romane primitive? Qui est-ce qui a fai l'hypothèse de cette langue? Expliquez sa théorie.

14. Quelle est l'idée de Mr. Ampère sur cette théorie? Quels faits donné-t-il pour supporter ses raisons?

15. Dans quelles langues l'article existe-t-il? Citez-en où il n'existe pas. Est-ce une partie du discours nécessaire dans toutes les langues? Expliquez votre réponse.

16. Quel grand avantage le pronom personnel de l'ancienne langue française avait-il sur celui de la nouvelle? Donnez-en deux exemples.

17. Donnez l'étymologie des adverbes: *rien, guère, aujourd'hui.*

B. A. ORDINARY EXAMINATION.

THURSDAY, APRIL 21ST:—MORNING, 9 TO 12.

Examiners,..... P. J. DAREY, M.A., B.C.L. / PROF. M. MILLER.

1. (*a*) Traduisez en anglais:

Sire, c'est rarement qu'il s'offre une matière
A montrer d'un grand cœur la vertu toute entière;
Suivant l'occasion elle agit plus ou moins,
Et paraît forte ou faible aux yeux de ses témoins.
Le peuple qui voit tout seulement par l'écorce,
S'attache à son effet pour juger de sa force;
Il veut que ses dehors gardent un même cours,
Qu'ayant fait un miracle, elle en fasse toujours:
Après une action pleine, haute, éclatante,
Tout ce qui brille moins remplit mal son attente.

CORNEILLE, *Horace* V. 2.

(*b*) Monsieur Bassecourt!—En voilà un drôle de bonhomme! il commence toujours par dire du bien des gens, et puis ensuite il vous les arrange qu'ils ne sont plus bons à jeter aux chiens! Ah! tu tournes trop vite,—Si tu crois que je vais attendre la fin de tes histoires!.....Ah ça mais il en manque un de notre société—Qui donc? Monsieur Vertillac, l'agent de change.—Monsieur Edgard ne l'aura pas encore vu depuis qu'il vient chez nous pour faire le portrait de Mademoiselle Eugénie.....car c'est une rage de portraits ici depuis quelque temps.....comme si monsieur

n'avait pas pu attendre son retour à Paris pour.....Mais non il a fallu qu'il fît venir deux artistes à la campagne.—Les Faux bons hommes.

(c) Qu'irai-je faire, moi, au milieu de ces hardis aventuriers de la finance! Pauvre moineau né sous tous les toits, je craindrais toujours l'ennemi qui se cache dans le coin obscur; prudent travailleur, je penserais au luxe de la voisine si subitement évanoui; observateur timide, je me rappellerais les fleurs lentement élevées par le vieux soldat, ou la boutique dévastée pour avoir changé de maîtres! Loin de moi les festins au-dessus desquels pendent des épées de Damoclès. Je suis un rat des champs; je veux manger mes noix et mon lard assaisonnés par la sécurité.

E. Souvestre, *un Philosophe sous les toits.*

2. Racontez un peu plus amplement les événements auxquels Souvestre fait allusion dans le passage précédent.

3. Donnez un aperçu de l'histoire du théâtre en France dès son commencement jusqu'au temps de P. Corneille inclusivement.

4. Quelles sont les trois unités qu'avait adoptées la tragédie française? Ecrivez un examen critique d'Horace sous le point de vue de l'unité d'action.

5. Expliquez les mots: *mânes*, *Parques*, *trophées*, *furie*, et *enfers*, employé dans le sens des anciens Romains. A quel usage les mots d'Horace adressés à son père: *Disposez de mon sang, les lois vous en font maître*, se rapportent-ils? A quel événement de l'histoire romaine le roi Tulle fait-il allusion, quand il dit: *Que Rome dissimule ce que dès sa naissance elle vit en Romule.*

6. Corrigez les phrases suivantes et indiquez les règles suivant lesquelles vous les corrigez: 1. Ne crois pas que le peuple stupide est le maître absolu d'un renom bien solide. 2. Croyez-vous que c'est mon frère qui a fait cela? 3. Il est plus savant qu'on le croit. 4. La plus heureuse vie n'a pas autant de plaisirs qu'elle n'a de peines. 5. Il écrit mieux qu'il parle. 6. La poésie est plus naturelle à tous les hommes qu'on le pense. 6. Votre sœur ne m'a pas dit la vérité et je la ferai voir qu'elle m'a trompé. 7. On ne peut avoir plus d'esprit que mon frère n'a. 8. Etes-vous la mère de cet enfant? Je le suis.

7. Dans quels cas le pronom sujet doit-il suivre le verbe? Donnez-en trois exemples.

8. Traduisez: All the world's a stage,
And all the men and women merely players:
They have their exits and their entrances;
And one man in his time plays many parts,
His acts being seven ages. At first the infant,
Mewling and puking in the nurse's arms.
Then the whining school-boy, with his satchel

And shining morning face, creeping like snail
Unwillingly to school. And then the lover,
Sighing like furnace, with a woeful ballad
Made to his mistress' eyebrow. Then a soldier
Full of strange oaths, and bearded like the pard,
Jealous in honour, sudden and quick in quarrel
Seeking the bubble reputation
Even in the cannon's mouth.

SHAKESPEARE, As You Like It.

B. A. HONOUR EXAMINATION.

TUESDAY, APRIL 5TH :—MORNING, 9 TO 1 P.M.

Examiner,.....P. J. DAREY, M.A., B.C.L.

1. Traduisez en français :

The English, in fact, are strongly gifted with the rural feeling. They possess a quick sensibility to the beauties of nature, and a keen relish for the pleasures and enjoyments of the country. This passion seems inherent in them. Even the inhabitants of cities, born and brought up among brick and walls and bustling streets, enter with facility into rural habits, and evince a turn for rural occupation. The merchant has his snug retreat in the vicinity of the metropolis, where he often displays as much pride and zeal in the cultivation of his flower garden, and the maturing of his fruits, as he does in the conduct of his business and the success of his commercial enterprises. Even those less fortunate individuals, who are doomed to pass their lives in the midst of din and traffic, contrive to have something that shall remind them of the green aspect of nature. In the most dark and dingy quarters of the city, the drawing-room window resembles frequently a bank of flowers ; every spot capable of vegetation has its grass-plot and flower-bed ; and every square its mimic park, laid out with picturesque taste, and gleaming with refreshing verdure.

Washington Irving.

2. Traduisez en anglais :

Ah ! souffrez que tout mort je vive (*b*) encore en vous ;
Et du moins en mourant permettez que j'espère (*b*)
Que vous saurez (*c*) venger l'amant avec le père,
Rien n'est pour vous à craindre : aucun de nos amis
Ni vos desseins, ni ce qui m'est promis ;
Et, leur parlant tantôt des misères romaines,
Je leur ai tu la mort qui fait naître nos haines,
De peur que mon ardeur, touchant vos intérêts,
D'un si parfait amour ne (*d*) trahît les secrets
Il n'est su que d'Evandre et de votre Fulvie.

CINNA *Acte* 1, *sc. IV.*

3. *a, b.* Ecrivez les temps primitifs de ces verbes. Donnez leur étymologie. Pourquoi sont-ils à ce temps et à ce mode? *c.* Ecrivez l'imparfait et le plus-que-parfait du subjonctif de ce verbe.

4. *c.* Pourquoi *ne* est-il employée ici? Donnez la règle.

5. Traduisez en anglais ces phrases suivantes tirées des *Faux bous hommes* et *Cogery*.

Je joue assez bien du Boncourt. Il s'agit d'acheter à nous deux..... De là la degringolade. Achetons tout en sous-main. Il y a des je ne sais qui, qui grugent notre bien. Quel aplomb! Je ne jouerai que tous les deux jours. Ah! s'il n'y allait pas de l'avenir de mon enfant! Il m'a dit vous lui aviez tenu rigueur. Ainsi vous vous jouiez de moi. Il ne faut pas m'en vouloir.—*En français.* Not to care much. To go to law. To congratulate. To take steps. To work one's way. To let go at full speed. To be a jolly fellow. He snatched the book out of my hand. The house is not the question; it is the garden. Are fruits sold by weight or by measure? You start, I think, at seven o'clock, I shall be there a quarter of an hour before We thought we were out of the range of the guns, the balls fell near us and my brother was within a very little of being killed. We lost our way several times, and when we reached the village it was already dark.

6. Ecrivez correctement les phrases suivantes et donnez les règles d'après lesquelles vous les écrivez.

Tous les élèves de ce professeur sont assidus et enchantés de ses leçons. Cet enfant paraît insensible et fatigué des reproches. Chose étrange cet homme est affamé et insensible aux éloges. Aller et revenir de Québec le même jour. Athéniens, ne soyez pas surpris que Démosthène et moi sont du même avis. Ni votre professeur ni le mien ne seront nommés à la place de l'inspecteur qui vient de mourir. Je ne comprends pas qu'on puisse s'exposer mille fois comme vous l'avez fait, et qu'on n'est pas tué mille fois. Il est vrai que lui et moi nous nous sommes parlé des yeux. Vous vous êtes accordé cette définition? où sont-ce les loups et les singes et les lions qui vous l'ont passé. Les serpents paraissent privé de tout moyen de se mouvoir, et uniquement destiné à vivre sur la place où le destin les a fait naître.

7. Quelle différence y a-t-il entre *plustôt* et *plutôt ;* il a *parlé haut,* et il a *parlé hautement ; mesdemoiselles marchez droit,* et *mesdemoiselles marchez droites ; tant* et *autant,* et *pendant* et *durant ;* entre *quoique* et *quoi que.*

8. Indiquez la distinction entre les homonymes *sain, saint, ceint, le sein* le *seing.* Même question pour *la scène, la cène, la seine, saine.*

B. A. HONOUR EXAMINATION.

GRAMMAIRE HISTORIQUE AND LITTERATURE. FRANCAISE

THURSDAY, APRIL 14TH :—MORNING, 9 TO 1 P.M.

Examiner, ...P. J. DAREY, M.A., B.C.L.

1. Qu'est-ce qu'on appelle *langue romaine rustique ?* Pourquoi l'appelle-t-on ainsi ? A quelle époque entra-t-elle dans l'Eglise ?

2. Donnez une preuve de l'originalité artistique de la littérature française au XIIème siècle, ainsi que de son influence à l'étranger. Citez quelques grands monuments littéraires de cette époque.

3. Combien de dialectes principaux comprenait lalangue française au moyen-âge ? Quels étaient ces dialectes ? Sur quoi portaient ces différences dialectales ? Quel est celui qui a prévalu ?

4. A combien de cas dans la langue française furent réduits ceux de la langue latine ? Quels furent-ils ? Quand disparurent-ils de la langue ?

5. Pourquoi *l's* et non une autre lettre a-t-elle été adoptée pour marque du pluriel ?

6. Comment expliquez-vous l'orthographe de *grand'mère*, *grand'faim*¿

7. Quand les pronoms possessifs *mon*, *ton*, *son*, commencèrent-ils a être employés devant les noms féminin, commençant par une voyelle ? De quelle forme se servait-on auparavant ? Donnez-en des exemples.

8. De combien de verbes différentes le verbe français être est-il formé ? Donnez respectivement les temps formés par chacun de ces verbes, et dites comment le verbe français a-t-il été formé.

9. Expliquez comment le futur des verbes français est formé. Quel mode possède le français, qui était ignoré des latins. Qu'est-ce que ce mode désigne ? Comment est-il formé ?

10. D'où viennent les adverbes français ? Donnez les exceptions, donnez les significations et les étymologies des adverbes *ailleurs*, *amont*, *demain*, *désormais*, *dorénavant*, *rien*, *guère*, *trop*, *partant*, *assez*.

11. Donnez la liste complète, en ordre chronologique des écrits de Mme. de Staël. Faite connaître en peu de mots chacun de ces écrits. Faites une courte biographie de Mme. de Staël,

12. Faites une courte biographie de Mignet. Dites qui étaient ses amis et quelle influence dans la littérature et la politique de ce siècle eut cet auteur. Donnez une liste de ses ouvrages. Lequel considère-t-on comme le meilleur.

13. Faites une liste de 12 des plus grands auteurs du règne de Louis Philippe. Dites dans quel genre chacun de ces auteurs s'est distingué et citez quelques-uns de leurs ouvrages.

14. Quels sont les auteurs qui ont écrit, *Les paroles d'un croyant*, la *Vie de Ste. Elizabeth de Hongrie*, *l'Histoire de dix ans* (1830-1840). *Ruy Blas*, *Les Confessions d'un enfant du siècle*, *Jocelyn*, *Lettres à une inconnue*, *Histoire du roi Bohême et de ses sept petits châteaux*, *Le simple discours*, *Les enfants de la France*.

15. Qui est-ce qui a écrit les vers suivants :

Poète, prends ton luth et me donne un baiser ;
La fleur de l'églantier sent ses bourgeons éclore
Le printemps naît ce soir ; les vents vont s'embraser ;
Et la bergeronnette en attendant l'aurore
Aux premiers buissons verts commence à se poser.
Poète prends ton luth et me donne un baiser.

Traduisez ces vers.

JUNIOR CLASS.

WEDNESDAY, APRIL 13TH :—AFTERNOON, 2 TO 5.

Examiner,.....C. F. A. MARKGRAF, M.A.

1. Translate into English :—

(A) Jetzt, nach vollendetem Geschäfte, legte sich dieser wohlthätige Genius wieder zu seinem ernsteren Bruder hin. „Wenn die Morgenröthe anbricht," rief er mit fröhlicher Unschuld, „dann preiset mich die Welt als ihren Freund und Wohlthäter! O welche Freude, ungesehen und heimlich Gutes zu thun! Wie glücklich sind wir unsichtbaren Boten des guten Geistes! Wie schön unser stiller Beruf!"

So sprach der freundliche Engel des Schlummers.—Der Todesengel sah ihn mit stiller Wehmuth an, und eine Thräne, wie sie die Unsterblichen weinen, stand in seinem großen dunkeln Auge. „Ach," sagte er, „daß ich nicht, wie du, des fröhlichen Dankes mich freuen kann; mich nennt die Welt ihren Feind und Freudenstörer!—„O mein Bruder," erwiederte der Engel des Schlafes „wird nicht auch, beim Erwachen, der Gute in dir seinen Freund erkennen und dankbar dich segnen? Sind wir nicht Brüder und Boten eines Vaters?"

So sprach er; da glänzte das Auge des Todesengels, und die brüderlichen Genien umarmten sich zärtlich.

(From „Tod und Schlaf" by Krummacher.)

(B) Ich wohn' in einem steinernen Haus,
Da lieg' ich verborgen und schlafe;
Doch ich trete hervor, ich eile heraus,
Gefordert mit eiserner Waffe.
Erst bin ich unscheinbar und schwach und klein,
Mich kann dein Athem bezwingen;
Ein Regentropfen schon saugt mich ein,
Doch mir wachsen im Siege die Schwingen;
Wenn die mächtige Schwester sich zu mir gesellt,
Erwachs' ich zum furchtbar'n Gebieter der Welt.

SCHILLER, Parabeln und Räthsel.

(C) „Mein Vater, mein Vater, und siehst du nicht dort
Erlkönigs Töchter am düsteren Ort?"
„Mein Sohn, mein Sohn, ich seh' es genau;
Es scheinen die alten Weiden so grau."
„Ich liebe dich, mich reizt deine schöne Gestalt,
Und bist du nicht willig, so brauch' ich Gewalt." "
„Mein Vater, mein Vater, jetzt faßt er mich an!
Erlkönig hat mir ein Leid's gethan!"

(From Goethe's „Erlkönig.")

2. (*a*) What nouns *must* modify the radical vowel in the Plural? (*b*) What nouns may take the plural ending „n" or „en"? Do any of them modify the radical vowel?

3. (*a*) Give the gender, meaning and Nominative Plural of:—Strom, Macht, Vetter, Nation, Ueberrock, Knabe, Halstuch, Tag, Uebung Stunde, Bruder, Thurmuhr, Land, Wald, Thor;—and (*b*) the meaning and Nominative Singular of:—Augenärzte, Säle, Kaufleute, Eisenbahnen, Taschenbücher, Schiffer, Götter, Arbeitstische, Gartenfrüchte, Gespräche, Kleiderschränke, Kronleuchter.

4. (*a*) Decline in both numbers:—the diligent young man; our oldest town;—(*b*) in the Singular:—bright, hard steel;—(*c*) in the Plural:—broad, green fields.

5. Give the meaning and derivation of:—Bäumchen, ärmst, Gärtchen, gläsern, höher, Büchlein, Bäuerinn, stärker, hölzern, kürzest, Fräulein, Blättchen, Vöglein, klüger, nächster, knöchern, Kästchen, Lüftchen, am liebsten.

6. (*a*) Write in full letters:—16, 39, 81, 101, 573, 6040. (*b*) Translate:—I have seen him *twice* to-day. Have you been there a *second time*? They have no *time* to stay. This is the thirteenth of April, 1881.

7. (*a*) Wollen, sollen, müssen, wissen, mögen, dürfen, können, sein. Give the 3 persons Sing., Present Indicative, of these verbs. (*b*) Give the Present Infinitives of the following Perfect Participles:—gefallen, verdorben, gekannt, zerbrochen, verziehen, gebunden, gewußt, vorgelesen, genommen, versprochen, gebracht, zerrissen.

8. Conjugate erzählen and zurückschicken, giving the 3rd Sing. and the 2nd Plural of all Tenses of the Indicative.

9. Translate into German:—

My nephews have gone to their neighbor's house. Those young ladies are my sister's friends. The mother, son and daughter were at home. This new house is not as high as our old *one*. The reading of good books strenghtens the mind. Shut the doors and open the windows. All children like amusing stories. The square, in which we live, is planted with shady lime-trees. Frederick the Great of Prussia lived in the last century. We bought (Perf.) ten pounds of sugar and fourteen yards of fine, white linen. I know what you are looking for. It is very useful to know several foreign languages. Henry departed (Perf.) last Tuesday evening with the half-past nine o'clock train.

SENIOR CLASS.

WEDNESDAY, APRIL 13TH :—AFTERNOON, 2 TO 5.

Examiner, ...C. F. A. MARKGRAF, M.A.

I. Translate from *Schiller's* „Maria Stuart" :—
Act I., Scene VII., pages 27-28 ; and
Act II., Scene IV., pages 48-49.

a. Give a brief outline of the plot of this tragedy, and delineate the characters of *Queen Elizabeth*, *Mary Stuart*, Lords *Leicester*, *Burleigh* and *Shrewsbury*.—Mention the names of other personages deserving of notice in this drama.—What does *Carlyle* say of *Schiller* as a dramatist ? What are the respective opinions of *Goethe* and *Mme de Staël* as to the merits of this play ?

II. GRAMMAR.—

1. Decline (*a*) in the Singular and Plural :—der tapfere Feldherr ; Ihre Frau Schwägerinn ; derjenige Menſch, welcher or der ;—(*b*) in the Singular :—jeder Leipziger Student ; eine ſo freundliche Aufnahme ;—(*c*) in the Plural :—public buildings ; great undertakings (Sing: Unternehmen, n.)

2. (*a*) What is meant by *adjective*-nouns ? Of what gender are they, and what is their declension ? Give examples. (*b*) Mention some adjective-nouns in German, which are *pure* nouns in English.

3 (*a*) When do possessive pronouns remain unchanged ? (*b*) When are possessive pronouns declined like adjectives ? (*c*) When are welcher welche, welches, pl. welche, used in the sense of *any* or *some*? Give short examples for *a*, *b*, *c*.

4. (*a*) Write down the prefixes of those compound verbs which are partly *separable*, partly *inseparable*. (*b*) What are *proper* and *improper*, and *purely* reflective verbs ? Instance three of each kind.

5. (*a*) Give the irregular forms of the following verbs :—fahren, erhalten anfangen, gefallen, begreifen, erleiden, befehlen, zuſchließen, beweiſen. (*b*) Parse, and give the Present Infinitives of :—nähme, wirf, verdürbeſt, ſpönnet, iß, ſtarb, wandten, trägt auf, ſtündet, lies.

6. Conjugate in the Passive voice „einladen," giving the 2nd Singular, and Plural of all moods and tenses.

III. Translate into German :—

On the entrance of the president into the assembly every one rose in order to greet him. The noble prince gave back (the) peace to his coun-

try, notwithstanding the losses which he sustained by it. The host received his guests at the door, and led them in. We crossed that river, although it was covered with ice. It is our duty to help those who cannot help themselves. Why did you go away instead of following us? Charles I shall take with *me*, but Albert must remain at home. Adelaide went to the ball with Frances' and Matilda's daughters. While the house was *being* built the family lived at a friend's house. I do not repent of the promise (which) I had given him, but I long to fulfil it. Meet me outside the city-gate. We thought you had gone out. The ships sailed along the coast.

IV. LITERATURE.

1. Mention the most important documents of *Old High-German* poetry now extant. What can you say as to their nature and form? Give the names of the authors.

2. Describe the peculiar character of the *Suabian* age.

3. Name the principal writers of the first essays of dramatic poetry.

4. Write short notes on *Sebastian Brandt*, *Hans Sachs* and *Johann Agricola*.

THIRD YEAR.

WEDNESDAY, APRIL 20TH :—AFTERNOON, 2 TO 5.

Examiner,.....C. F. A. MARKGRAF, M.A.

I. Ueberſetzen Sie ins Deutſche:—

(A) When Alcibiades was for the first time to harangue the Athenians in *the* public market-place, he confessed to Socrates that he was very *much* afraid. "Would you be afraid," the latter asked *of* him, "to speak to a baker?"—No!—"Or to a butcher?"—Certainly not.—'But to a merchant?"—Just as little.—"Well then," continued Socrates, "the whole population consists of such people. You are not afraid of the individuals; why then should you feel shy (a shyness) of them when they are assembled?"

(B) The strangers were highly pleased to find so soon and so unexpectedly the man of whom they were in search, and to be dispensed by this *occurrence* from a long and troublesome journey. They showed him the most heartfelt esteem and presented to him a hand-writing from their pious duke Christian. The noble prince expressed in it the sincere interest he took in Gerhardt's fate, and for the present, till he could provide for him better, ensured to him a pension. With a tear of the deepest emotion Gerhardt hastened to his wife and em-

braced her with *these* (the) words: "There, read yourself, my dear. See how the good God provides for us and helps us in a way of which we *could* (should) not have thought. Did I not tell you: Commit thy way unto the Lord: trust also in him; and he shall bring it to pass. Now be comforted and of good courage; dry your tears of sorrow and let them become tears of joy."

The strangers as well as the host and hostess were deeply moved at this scene, and thanked God in secret for the help which he had prepared for the exiled.

II. Grammatik.

1. (*a*) Was für Substantiven werden durch die Nachsilben *el, er, e, heit, keit, schaft, thum* gebildet? (*b*) Welche Nachsilben dienen zur Bildung von Adjektiven?

2. Erwähnen Sie einige Adjektiven (*a*) welche den Genitiv, (*b*) welche den Dativ regieren.

3. Geben Sie die entsprechenden *deutschen* Idiome der folgenden Sätze:— Walking and riding are wholesome exercises. Youth is the time for sowing and old age the time for reaping. Take courage! I think I know what ought to be done. We wish it were true! Why do people make so much ado about such a trifle? He acts with and for me. Was he blamed for having done his duty?

4. Uebersetzen Sie:—Wollen Sie die Ausführung dieses schweren, mit so vielen Unannehmlichkeiten verbundenen Auftrages unternehmen?—Wir haben diese schöne, in dieser Nachbarschaft so seltene Blume am Ufer des kleinen zwischen den Felsen sich durchwindenden Baches unter einer alten hundertjährigen Eiche gefunden.—Dadurch, daß wir die unbedeutenderen Ereignisse mit Stillschweigen übergehen, werden wir mehr Zeit gewinnen, um diejenigen zu erklären, die zum Verständnisse des Ganzen von Wichtigkeit sind.

5. Zählen Sie die Fälle auf (*a*) wo die englische Präposition 'of' im Deutschen durch den Genitiv des Substantivs oder Pronoms; and (*b*) wo sie durch eine Präposition ausgedrückt wird.

III. Uebersetzen Sie aus Schiller's „Wilhelm Tell":—

2. Aufzug., 2. Scene. (Seite 47.)
3. Aufzug., 2. Scene. (Seiten 66-67.)

a. Welche Gründe lassen sich anführen, um zu beweisen, daß die Geschichte von *Tell's* Meisterschuß mit dem Bogen dem Bereiche der Sage angehöre, und daß *Tell's* eigene Person einen wesentlich mythologischen Charakter an sich trage?

b. Welchen Quellen hat *Schiller* vorzugsweise den Stoff zu diesem Drama

entlehnt? Welche Schwierigkeiten stellten sich ihm zur glücklichen Behandlung dieses Stoffes entgegen; und wie hat er dieselben überwunden?

c. Wann wurde dieses Werk begonnen und vollendet? Heben Sie diejenigen Scenen hervor, die zu den gelungensten gerechnet werden.

IV. Literatur.

1. Schreiben Sie kurze Notizen über Opitz, Flemming, und Paul Gerhardt.

2. Nennen Sie die Autoren der folgenden Werke:—Satirische Briefe, Die Trojanerinnen, Der Seifensieder, Das Recht der Vernunft, Geschichte der Kunst des Alterthums, Messias, Stimmen der Völker Laokoon, Lenore, Der siebzigste Geburtstag.

3. Geben Sie die Data von Wieland's Geburt und Tod; und eine kritische Uebersicht seiner besten Schriften. Durch welches seiner Werke wurde der romantische Geschmack in unserer Literatur hervorgerufen?

4. Erzählen Sie in Kürze die Hauptbegebnisse aus Schiller's Leben, und erwähnen Sie seiner vorzüglichsten Schauspiele.

B. A. HONOUR EXAMINATION.

FRIDAY, APRIL 22ND:—MORNING, 9 TO 1.

Examiner,.....C. F. A. MARKGRAF, M.A.

I. Uebersetzen Sie aus Schiller's „Geschichte des Dreißigjährigen Krieges":—

Erstes Buch.—Seiten 30–31.
Zweites Buch.—Seite 141.

II. Uebersetzen Sie aus Heine's „Buch der Lieder":—

Belsazer.—Nummer 10. Seiten 63-64.
Aus alten Märchen winkt es.—Nummer 43. Seiten 110-111.
Lieder der Heimkehr.—Nummer 7. Seiten 134-135.
Götterdämmerung.—Seite 180.

III. Uebersetzen Sie aus Goethe's „Faust" die auf Seiten 29-30, 66-67, 147-148, 159-160 bezeichneten Stellen.

1. Geben Sie die Data der stufenweisen Entwickelung und der Vollendung dieses Dramas.

2. Schildern Sie ausführlich die Charaktere von *Faust*, *Mephistopheles*, *Wagner*, und *Margarethe*.

3. Mit welchen Charakteren der alten persischen Mythologie lassen sich *Faust* und *Mephistopheles* passend vergleichen; und warum?

4. Geben Sie den Inhalt von *Faust's* Monolog auf Seiten 17-21.

5. Heben Sie die verschiedenartigen Elemente hervor, welche sich besonders in der zweiten Hälfte dieses Dramas geltend machen.

IV Uebersetzen Sie ins Deutsche:—

(A) During this period of fermentation in Europe, so fertile in invention, it may be said of the Emperor Maximilian, that he stood forth amid the new forms as a dignified image of olden time, since in him again, and for the last time, was personified chivalry in all its glory. As this in its great features was equally elevated and amiable, so did Maximilian unite with bravery, dignity, and decision of character, the gentleness of a child; and as the warm imagination of the middle ages prompted to the most astonishing and unprecedented adventures, so also in the exploits of Maximilian we find predominating valor, enthusiasm, and sometimes temerity. One of his most favorite, because the most daring, pastimes, was that of hunting the chamois, and on these excursions he often run into such hazard that his friends trembled for his life; in like manner did he sport with danger in wrestling matches, where, with his own hand, he conquered the very lion itself, the same as on the field of battle, where many an antagonist was doomed to lie at his feet. At the same time, the Emperor, amid his other avocations, found time for the arts and sciences, and acquired knowledge to a degree which would excite admiration, even from those whose whole life is directed to such pursuits.

Kohlrausch, *History of Germany*.

(B).....The Oronico, eight hundred miles from the sea, forcing its way through a granitic range of the Guiana Mountains, forms the cataracts of Atures. To obtain a view of these rapids, let the traveller place himself on the summit of overlooking hills which rise just to the east of the river, and he has before him a scene that is stupendously grand. Other landscapes may be viewed and forgotten; but the majestic appearance of the rapids of the Atures leaves an impression that will never fade from the memory. For more than a league the river is broken by rapids and filled with huge granitic masses, piled on one another in endless confusion; while islands, clothed with crested palm-trees and beautiful vegetation, rise above the whitened waters.....

Myers, *Life and Nature under the Tropics*.

B. A. HONOUR EXAMINATION.

MONDAY, APRIL 25TH:—MORNING, 9 TO 1.

Examiner,.....C. F. A. MARKGRAF, M.A.

I. Grammatik;—

1. Erklären Sie die Bedeutung der *Prefixe* be, ent, er, ver, zer in Verben, welche von Substantiven und Adjektiven abgeleitet sind; und weisen Sie beispielsweise solche Verben vor.

2. Geben Sie die Bedeutung und Derivation der folgenden Wörter:—Gabe, Tracht, Kunst, schattiren, blättern, übrig, glatt, unsäglich, Geständniß, Jüngling, Gefährte, dicht, Dickicht, thöricht, äußern, duzen, feilschen, Glöckner, Räthsel, Bund, Zauberei, mühsam, friedmüthig, geläufig, mancherlei, alterthümeln, ächzen, Tugend, Neigung, wohnhaft, gewiß, Urlaub, empören Schicksal, vielfältig.

3. Geben Sie Beispiele (*a*) von *primitiven* Substantiven und Adjektiven und (*b*) über die verschiedenen Arten von Zusammensetzungen in Substantiven, Adjektiven, und Partikeln.

4. Weisen Sie die Regeln vor, die sich auf die *invertirte* Satzordnung, beziehen, und erläutern Sie dieselben durch Beispiele.

5. Erklären Sie die Transposition von Sätzen. Zeigen Sie den Unterschied zwischen *substantivischen*, *adjectivischen* und *adverbialen* Nebensätzen.

6. Entwerfen Sie eine genealogische Tafel der Zweige des *germanischen* Sprachstammes und ihrer Unterabtheilungen.

7. Erklären Sie die Regel der Lautverschiebung ("Grimm's Law"), und deren Anwendung in der *germanischen* Sprachgruppe.—Vergleichen Sie in dieser Hinsicht das *Neuhochdeutsche* mit dem *Englischen*.

II. Literatur (1150 bis 1350).

1. Geben Sie eine kurze Uebersicht der politischen Verhältniße zur Zeit der *Hohenstaufen*, und erwähnen Sie der Umstände, welche wesentlich dazu beitrugen, das poetische Leben in Deutschland zu wecken, und zur künstlerischen Ausbildung zu leiten.

2. Warum wandte sich vorzugsweise der Adel der Ausübung der Poesie zu? Welcher Natur war die Bildung des Adels?

3. Schildern Sie den Charakter der *ritterlichen Poesie* im Allgemeinen.

4. Erklären Sie die verschiedenen *metrischen Formen*, in welchen die Poesien der höfischen Dichter abgefaßt wurden.

5. (*a*) Erwähnen Sie der vorzüglichsten Dichter aus der Blüthezeit des *Minnegesangs* (oder der *höfischen Lyrik*). (*b*) Nennen Sie die Sammlungen von lyrischen Dichtungen der Minnesänger, die sich bis auf unsere Tage erhalten haben.

6. Charakterisiren Sie die *höfische Epik*.

7. (*a*) Nennen Sie die Gedichte, welche zur Gruppe des *bretonischen* Sagenkreises gehören; und nennen Sie die Verfaßer derselben. (*b*) Vergleichen Sie die Behandlung des *Karolingischen* Sagenkreises mit der des *bretonischen*.

8. Was können Sie über die Entstehung und den Inhalt der Sage *vom heiligen Gral* berichten?

9. (*a*) Welchen Umständen verdankt das *volkstümliche Epos* seine großartige Entfaltung? (*b*) Geben Sie kurz den Inhalt der folgenden Gedichte: —*Das Eckenlied, König Rother, Gudrun*.

10. In welchem Zeitalter hat sich die *didaktische Poesie* zuerst selbstständig entwickelt? Nennen Sie die Hauptformen derselben. Welche Gedichte dieser Gattung verdienen eine besondere Beachtung?

11. Kontrastiren Sie die *didaktischen* Dichter mi tden *höfisch epischen*.

SPANISH.

HONOUR COURSE.

FRIDAY, APRIL, 22ND:—MORNING, 9 TO 1.

Examiner,.....REV. A. DE SOLA, LL. D.

1. Give rules for forming genders of articles, showing peculiarity of *lo*; also rules for forming genders of nouns and adjectives; and, for illustration, translate the following into Spanish:

Don Diego's cousin has left for Madrid. Have you written a letter to your father? This house belongs to the brother of my friend. These presents I have received from their sisters. The fruit of this tree is very agreeable. The fathers are good and the brothers are also good. God has given life to men. I have seen a blue flower in the garden of my aunt. I can write with black ink. The trees of the garden are green. The honey which I have bought is sweet.

2. Show how diminutives and augmentatives are formed; and translate the following, as examples:

How pretty is your little sister! I have seen her sitting all alone, near

a small table, with a pretty round face, her little red mouth and her pretty hands so small; she looked like a little angel. Was it a pistol shot? No, it was a gun-shot which that large man has fired. What tall (or strong) boy is this? What very rich man is that?

3. Write the rules for expressing comparatives of superiority and inferiority, and three forms of the superlative. Translate as examples:—

John is richer than Phillip. His hat is smaller than his brother's. His sister's exercise is more difficult than his. This dog is more faithful than that of the gardener. The man is not so prudent as his brother. My aunt's house is the highest in the street, and the most beautiful in the city.

4. Write out personal pronouns in all cases, numbers and genders. What have you to say of *si?* Show peculiarities of *mi*, *ti* and *si* when joined to *con*. Write compound disjunctive pronouns, (self, selves) personal pronouns with infinitives of verbs; possessive pronouns; relative possessive; demonstrative, relative, interrogative and indefinite. Construct sentences as examples of each of these.

5. Conjugate verbs, *hacer* and *tener*, *ser* and *estar*.

6. Translate from Cervantes:—

"Hechas pues estas prevenciones, no quiso aguardar mas tiempo a poner en effecto su pensamiento, apretandole á ello la falta que él pensaba que hacia en el mundo sa tardanza segun erar los agravios que pensaba deshacer, tuertos que enderezar, sinrazones que enmendar y abusos que mejorar, y deudas que satisfacer."

Translate into Spanish:—

7. "The first that master Nicholas delivered into his hand were the four volumes of Amadis de Gaul. Said the curate, "There is something mysterious in this circumstance; for, as I have heard said, this was the first book of chivalry printed in Spain, from which all later ones have derived their origin and plan; and therefore, it appears to me, that we ought to condemn him to the fire without hesitation, as the lawgiver of such a pernicious sect." "No, sir, said the barber, for I have heard that this is the best book of the kind ever composed, and therefore, ought to be pardoned as a model in its way."

8. What have you to say as to the probable period of the first Romances? of the "Poema del Cid?" The "Conde Lucanor" of Don Juan Manuel? Give a short notice of the author, and a brief sketch of the different kinds of poetic romance.

9. Translate and parse from De Vega:

Conjuré la esclava, y ella
Sin mostralle de Dionisio

Los tormentos, confesó
Las verdades sin martirio.
Firmada la libertad,
La dió en un papel, que hizo
El rey, que sabe el proceso,
En que sus culpas fulminó.
Saquéla de casa luego,
Porque su aliento nocivo
No sembrara deshonor
Por las nobles edificios.

La Estrella de Sevilla.

HEBREW.

JUNIOR CLASS.

THURSDAY, APRIL 21ST:—MORNING, 9 TO 12.

Examiner,.....REV. A. DE SOLA, LL.D.

1. Give the rules for adjectives joined to nouns; and show by examples the effect of the use or omission of the definite article in connection with them.

2. Write the absolute forms of the personal pronouns; also the relative, demonstrative and interrogative pronouns.

3. Show how contractions are formed with the definite article and a prepositional prefix preceding it; give an example *e. g.* מִן preceded by the article and one of the letters ב,כ,ל,מ.

4. Add the pronominal fragments in both numbers and genders to the noun בַּיִת.

5. Give such a description of Segholates as will include all the various forms in the grammars; give general rules for forming their construct case singular when in connection with other nouns, and with the pronominal fragments.

6. Describe mutable and immutable vowels; and show the changes masculine nouns formed of mutable vowels undergo to form their construct case singular; give examples.

7. Explain ו conversive and ו connective; show the changes of punctuation in the former, accordingly as it is placed before a preterite or future tense, or a guttural letter.

8. Conjugate the verb לִמַּד, in the *Kal* form.

9. Show how are formed the construct cases singular and plural of feminine nouns; nominative and construct cases plural of masculine nouns; construct singular of feminine nouns, also dual termination; give examples.

10. Translate into Hebrew:

He and I were in the garden. She is in the large city. He was in the house with his good book. The land is good and very wide (רחבה מאר). From this great city to that small village. He made all the vessels כל היום which were on the table.

11. Translate into English:

ה על השלחן וזה בבית: האיש הטוב בעיר הגדולה: אנחנו בבית הגדול והיא בגן: הוא לומד בספר הטוב והגדול הזה. רשע אחד רצח את הקסר: מן העיר ההיא אל הארץ הזאת:

SENIOR CLASS.

THURSDAY, APRIL 21ST:—MORNING, 9 TO 12.

Examiners,..... { REV. A. DE SOLA, LL.D. / REV. G. WEIR, LL.D.

1. Conjugate the irregular verb סבב in the *Niphal* form.

2. Show how the various paradigms of masculine nouns given by Gesenius may be reduced into two chief classes; in so doing, explain mutable and immutable vowels, and show the changes mutable vowels undergo in dissyllabic nouns, to form their construct cases in the singular.

3. Give one general definition that will apply to the various forms of *Segholates* exhibited in the grammars; show how they form their construct cases, singular; and what peculiarity they exhibit when the pronominal fragments are added to them.

4. Conjugate the irregular verb (פ Guttural) עמד in the *Hiphil* form, pret. tense; the verb (ע Guttural) שחט in the *Kal* future; and the verb (ל Guttural) שלח in the *Niphal* preterite.

5. Add the pronominal fragments, in both genders and numbers, to the masculine noun דבר in both numbers.

6. Give the rules for adjectives in immediate connection with nouns; show the effect of the definite article on them, accordingly as it is used or omitted; and write out a noun and adjective (e. g. מלך, טוב) with the pronominal suffixes.

7. Translate literally Psalms 2, 4, 5 and 6.

8. Analyze fully Psalm 3.

9. Give the rules for ו conversive and conjunctive, showing the changes of punctuation in the former, accordingly as it precedes a preterite or future tense, and a guttural letter.

10. Translate into Hebrew:

The man walked in the way, and saw (ראה) a tree planted by a rivulet of water. He partook (אכל) of its fruit, and sitting himself down, meditated on the goodness of God which is visible day and night. Thus walked he not in the way of scorners who shall not stand in the judgment, but shall be like the chaff which the wind driveth away.

11. Translate into English:

הרשעים נוסדו יחד על הקסר והרגו אותו ·אז דבר ה' אליהם באפו ובחרונו ·ואני נסכתי מלכי
חרעם בישבט ברזל ככלי יוצר תנפצם · איש דמים ומרמה יתעב ה' מגן הוא בער עברין לא אל חפץ
רשע הוא שנא כל פעלי און:

NEIL STEWART PRIZE.

GRAMMAR.

FRIDAY, APRIL 22ND:—FROM 9 A.M. TO 1 P.M.

Examiner,.....REV. A. DE SOLA, LL.D.

1. State the general principles governing the classification of masculine nouns with special reference to the formation of their construct forms, singular. Explain mutable and immutable vowels.

2. Give one general description which will apply to the various forms of Segholate nouns; give general rules for the formation of their construct cases singular, when in connection with nouns, and when with the pronominal fragments.

3. Conjugate the verb למד in the *Piel* form.

4. Conjugate the irregular verb ברך in *Piel*, *Pual* and *Hithpael* forms.

5. Write the noun דבר with the pronominal fragments, singular and plural.

6. Write the feminine noun תורה in the *plural* number with the pronominal fragments attached.

7. Give rules for adjectives; and show how their degrees of comparison are formed.

8. Write absolute forms of personal pronouns, the demonstrative, interrogative and relative, and give fragmentary forms of the latter.

9. Conjugate the irregular verbs לקח in fut. *Kal*; נגש in fut. *Niphal*; אכל in fut. *Hiphil*; ישב in fut. *Hophal*; מצא in fut. *Hithpael*.

10. Give the rules for (*a*) the definite article with its various changes of punctuation; (*b*) the formation of the construct pl. of masc. and fem. nouns (*c*) for the dual. nom. and const.; (*e*) for construct sing. of fem. nouns ending in ה and ת.

11. Add the pronominal fragments in both numbers to a noun and adjective in immediate connection, *e. g.* my good book, &c.

12. Describe ו conversive and ו conjunctive. Show changes in punctuation of the former when before a fut. or pret. tense, and also when before a guttural; show also its effect on the accent.

NEIL STEWART PRIZE

TRANSLATION.

MONDAY, APRIL 25TH:—FROM 9 A.M. TO 1 P.M.

Examiner,..... .....REV. A. DE SOLA, LL.D.

1. Translate literally second, third, fourth and fifth Psalms.

2. Analyze as follows:—

Ps. I., Verse 1 עצת, give nominative and root. התאים, difference between this and חוטאים. ובמשב, write *Kal* future of ישב. V. 2. יהגה, write future in full. V. 3. יתן, write preterite. V. 4. תדפנו, give root and write future.

Ps. II. V. 2. יתיצבו, write pret. *Kal*. נוסדו, root and preterite. V. 3. ננתקה, explain paragoge. V. 4. ישחק, explain interchange of radicals. למו. V. 5. אלימו. V. 6. Explain contraction in קדשי.

Ps. III. Analyze verses 5 and 6.

Ps. IV. Explain בנגינות. V. 2. בקראי. חנני, Explain נו, and write fut. *Kal*. V. 3 תאהבון, write future. V. 5, ודמו, root, and fut. sing. נתתה.

Ps. V. Explain נחילות and למנצח, also סלה. V. 4. ארך and ואצפה. V. 8. אשתחוה account for transposition.

3. Translate in Genesis I. 27 to 30, II. 10 to 13, III. 1 to 3, IV. 13 to 16 VI. 19 to 22, VII. 10 to 14.

4. Analyze I. 17, 18; II. 5; III. 14; IV. 7; V. 15; VI. 12; VII. 8, 9.

5. Translate Habakuk, the whole of the first chapter; in ch. II., first six verses; and in ch. III., last 5 verses.

6. Analyze in ch. I., verses 5, 6; in ch. II., verses 9, 10; and in ch. III., verses 18, 19.

7. Translate into Hebrew:—

Sun and moon were arrested in their orbits; at the light of thine arrows they went; and at the shining of thy glittering spear. An inward

shudder agitates me on hearing the prophetic words which proceed from my lips; terror penetrates my bones, my feet totter under me. Yet will I rejoice in the Lord and exult in the God of my Salvation.

8. Translate into English:—

כי אתה שלות גוים רבים ישלוך כל יתר עמים מרמי ארם וחמס ארץ קריה וכל ישבי בה הוי בצע בצע רע לביתו לשום במרום קנו להנצל מכף רע: הס מפניו כל הארץ:

CHEMISTRY AND NATURAL SCIENCES.

FIRST YEAR.

CHEMISTRY.

WEDNESDAY, APRIL 6TH:—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., Ph.D.

1. What are the necessary conditions of luminosity in flame?

2. Describe the preparation and properties of Phosphuretted Hydrogen, and state what substance results from its combustion.

3. Describe fully the manufacture of Sulphuric Acid, giving equations to represent the chemical changes supposed to take place.

4. Give the composition of the principal ores of Iron, and describe the production of cast and wrought Iron from them.

5. Name the principal varieties of Glass, and point out the differences in their composition and properties.

6. Give the composition of Glucose, and explain its conversion into Alcohol.

7. Point out the relationship existing between the Marsh-gas series of Hydrocarbons, the Primary Alcohols, and the Fatty Acids.

8. Name the substances indicated by the following formulas: $C_{10}H_{16}$ $C_{12}H_{22}O_{11}$, $C_2H_2O_4$. How may the last one be prepared?

9. By what tests may Arsenic and Copper be detected when in solu tion?

10. What do you understand by the basicity of an Acid, and the quanti valence of an Element?

11. What are the principal ways in which salts of the metals may be obtained? Give examples.

12. Give the composition of the following substances:—Pearlash Gypsum, Quartz, German Silver, Dextrin.

INTERMEDIATE EXAMINATION.

BOTANY.

THURSDAY, APRIL 14TH :—MORNING, 9 TO 12.

Examiner,.....J. W. DAWSON, LL.D., F.R.S.

1. State the nature and manner of assimilation of that portion of the food of Plants derived from the atmosphere.

2. What are the relations of Phosphates and Potash to the growing plant? State some practical facts.

3. Explain fully the nature and uses of Stomata, Chlorophyll and Spira Vessels in the Leaf, and of Fibrils on the Root.

4. Describe the Endogenous and Acrogenous Stems, with examples.

5. Describe the parts of the Pistil, including the ovules, and state the mode of their fertilisation.

6. What are the structures indicated by the terms Raceme, Umbel, Corymb, Cyme; give examples.

7. Describe fully the reproductive organs of Mosses.

8. Explain the terms Gamopetalous, Epigynous, Syngenesious, and the modifications of parts by which these arrangements are produced.

9. Define the Classes of the Vegetable Kingdom, and give an example of each.

10. In what Natural Families do we find Siliques, Didynamous Stamens, Labiate Corollas, or Pappus-bearing Achenes? Describe one of these structures.

11. Refer the specimens exhibited to their Classes and Orders, with your reasons for so referring them.

THIRD YEAR.

ZOOLOGY.

WEDNESDAY, APRIL 13TH :—MORNING, 9 TO 12.

Examiner,.....J. W. DAWSON, LL.D., F.R.S.

1. State the general characters of the *Protozoa*, and explain their arrangement in Orders, with examples.

2. How would you distinguish an animal of the class *Anthozoa* from a Hydroid or a Polyzoon?

3. State the characters of the *Echinodermata* as illustrated by any common animal of the class.

4. Name the classes of the *Mollusca*, and characterise two of them, with examples.

5. State the characteristic differences of *Annulata*, *Crustacea* and *Arachnida*.

6. State the external structures of Insects, and the stages of their metamorphosis.

7. State the distinctive characters of the class *Aves*, and its division into orders.

8. Give the characters of the *Reptilia*, and the distinction between the Batrachians and Reptiles proper.

9. How is respiration performed in Insects, Tube-dwelling Worms Lamellibranchiates, and Hydroid Polyps.

10. Characterise, and refer to their places in the system, any three of the following groups:—*Foraminifera*, *Pteropoda*, *Ganoidei*, *Ungulata*, *Asteroidea*, *Alcyonaria*.

11. Describe the specimens exhibited, and state the Provinces and Classes to which they belong.

B.A. ORDINARY EXAMINATION.

GEOLOGY.

TUESDAY, APRIL 12TH:—MORNING, 9 TO 12.

Examiners,..... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., PH.D.

1. State the distribution of the Laurentian and Huronian rocks in North America, and mention their distinctive lithological characters.

2. How is the Cambrian of England represented in Eastern America?

3. Explain the peculiarities of the Quebec group, and its geological relations.

4. How would you distinguish by fossils the Trenton Limestone from the Niagara Limestone, and this from the Corniferous?

5. Describe the Medina, Salina and Oriskany groups, and state theirgeological relations.

6. State the subdivisions of the Carboniferous in Nova Scotia, and mention their characteristic fossils and mineral products.

7. Give in tabular form the subdivisions of the Permian and Trias in Europe, with some characteristic fossils.

8. Describe the several ages of the Cainozoic time in Europe or America, mentioning the more important groups of fossils.

9. What are the geological relations of the coal of Vancouver's Island and the lignite of the Western Territories.

10. Explain the supposed origin of boulder-clay, and the causes of the distribution of boulders.

11. State what you know of the fossils exhibited, and their respective ages.

B. A. ORDINARY EXAMINATION.

LITHOLOGY.

TUESDAY, APRIL 12TH:—AFTERNOON, 2 TO 5.

Examiners,..... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., PH.D.

1. Name the principal rock-forming minerals, and classify them according to chemical composition.

2. Describe Lignite, and point out the principal differences between it and Bituminous coal.

3. Distinguish between sedimentary, eruptive and metamorphic rocks, giving examples of each.

4. Name the members of the Trachyte group, and describe one of them.

5. How would you distinguish Limestone from Dolomite, Quartzite from Felsite, and Tac-Schist from Hydromica-Schist?

6. What are Conglomerates and Breccias? State what you know concerning the origin of such rocks.

7. What are the mineral constituents of Basalt, Norite and Granite? To what groups do these rocks belong?

8. What are Loam, Loess, Marl and Travertin?

9. Define the following terms: Acidic, basic, pumiceous, amygdalodal, fragmental, microlite, accusory mineral.

10. Name the specimens exhibited, and describe them fully.

THIRD YEAR HONOURS.

MINERALOGY.

MONDAY, APRIL 25TH :—MORNING, 9 TO 12

Examiners, ... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., PH.D.

1. What do you understand (*a*) by a twinning-plane, (*b*) a composition-face, and (*c*) an axis of revolution. Mention any case in which the twinning-plane and composition-face do not coincide.

2. What forms are produced (*a*) by truncating and (*b*) by bevelling the edges of a cube, (*c*) by truncating the edges of the regular octahedron, (*d*) by truncating and (*e*) by bevelling the edges of a rhombic dodecahedron ?

3. Describe the crystal whose planes are represented by the following symbols:

$$\infty P. \quad \infty \breve{P}2. \quad \infty \breve{P}\infty. \quad OP. \quad P. \quad 2\bar{P}\infty. \quad 2\breve{P}\infty.$$

Give the corresponding symbols according to Dana.

4. Explain each of the following symbols:

$$3O\tfrac{3}{2}, \quad \frac{m\,Om}{2}, \quad \frac{m\,O\infty}{2}, \quad m\,R^n, \quad \infty \grave{P}\infty, \quad m\,\bar{P}'n, \quad m,\,\breve{P}n, \quad \infty\,\bar{P}'n.$$

5. Distinguish between cleavage and fracture, and show the importance of these characters in determining minerals.

6. Give the general characters of the Feldspar group. Name the members of the group, and classify them according to composition and crystalline form.

7. What is the composition of Prase, Moonstone, Asbestus, French chalk, and Satin-spar ?

8. Give the blowpipe characters of Stibnite, Sphalerite, Galenite, Magnetite, Gypsum and Barite.

9. Explain the use of the following substances in the determination of minerals: Cobalt Nitrate, Fluor-spar, Cupric Oxide, Potassium Bisulphate, Potassium Cyano-nitride.

10. Name the minerals exhibited, giving in each case the ground of your determination.

Determination of minerals in the Laboratory, afternoon 2 to 5.

B. A. HONOURS IN NATURAL SCIENCE.

MINERALOGY.

THURSDAY, MARCH 31ST :—MORNING, 9 TO 12.

Examiners, ... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B A., Ph.D

1. Name the principal members of the Zeolite group, and give their distinguishing characters.

2. State what you know concerning the mode of occurrence of Stibnite, Graphite, Halite, Barite and Limonite.

3. How would you distinguish Wollastonite from Wernerite, Hornblende from Epidote, Chromite from Franklinite, and Chalcocite from Tetrahedrite?

4. Give the symbols of the principal planes occurring in Garnet, Augite, Zircon and Quartz. Describe also the following combinations occurring (*a*) in Calcite, and (*b*) in Pyrite:

$$a \begin{cases} \infty\,\mathrm{R}.\ -\tfrac{1}{2}\,\mathrm{R}. \\ \infty\,\mathrm{R}.\ \mathrm{R}^3\ -\tfrac{1}{2}\,\mathrm{R}. \end{cases} \qquad b \begin{cases} \infty\,\mathrm{O}\,\infty.\ \dfrac{\infty\,\mathrm{O}\,\infty}{2} \\ \infty\,\mathrm{O}\,\infty.\ \mathrm{O}\,.202. \end{cases}$$

5. What are the directions of cleavage in the following minerals? Fluorite, Biotite, Sphalerite, Topaz and Gypsum.

6. What is the composition of Chrysoprase, Tridymite, Alabaster Enstatite and Arsenopyrite? Describe the two last.

7. Give the hardness, crystalline form and blowpipe characters of Tourmaline, Muscovite, Pyrolusite, Cassiterite and Cerussite.

8. Name some of the more important groups of isomorphous minerals, giving the composition of the members of each group. Give also examples of minerals which frequently exhibit hemimorphism.

9. Name the minerals exhibited, and give their chemical composition. Describe the crystalline forms of any four.

GEOLOGY AND PALÆONTOLOGY [in part].

THURSDAY, APRIL 7TH:—9 A.M. TO 12, AND 2 TO 5.

Examiners, ... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., Ph.D.

1. State the evidence as to Life in the Laurentian Period.

2. Classify the members of the Laurentian and Huronian in Canada, giving local examples and mentioning important economic minerals.

3. Describe the formations exposed in the Valley of the Ottawa, beginning at its confluence with the St. Lawrence.

4. Describe the Quebec group, stating its distribution, subdivisions and some characteristic fossils, with the questions as to its geological relations.

5. By what fossils would you recognize the Potsdam, Acadian and Chazy formations.

6. Tabulate the subdivisions of the Devonian in Canada, and state local peculiarities.

7. What is the geological position and what the mineral character and fossils of the Niagara, Kenenian and Hudson River Formations?

8. What is the range in geological time of the following genera:—*Zaphrentis Orthis, Phacops, Maclurea, Tetradium, Favosites, Murchisonia, Psilophyton.*

9. Name the characteristic fossils of the Trenton Formation and Utica Shale in the Province of Quebec, and compare them with those of equivalent formations in Europe.

10. Make a section through Nova Scotia from S. E. to N. W., shewing the relations of the formations.

11. State the Zoological or Botanical and Geological relations of *Receptaculites, Stromatopora, Pterichthys, Archaeopteris, Eurypterus, Ptilodictya*

2 P.M. to 5.

Refer the specimens exhibited to their Geological Formations, and state their Zoological or Botanical affinities.

GEOLOGY AND PALÆONTOLOGY [in part].

THURSDAY, APRIL 21ST :—9 A.M. TO 12, AND 2 TO 5.

Examiners,..... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., Ph. D.

1. What evidence exists of the presence of the Permian in Canada, in connection with the observed relations of the Carboniferous and Triassic?

2. Describe the earlier formations of the Mesozoic in Europe and America, with their useful minerals and characteristic fossils.

3. Give an account of the subdivisions and distribution of the Tertiary deposits in Manitoba and the North West Territories and mention their peculiarities in these regions.

4. Name the characteristic Reptilian and Cephalopodous genera of the Jurassic period, and describe one of the formations of this period in Europe.

5. State the geographical distribution and subdivisions of the Cretaceous in America and Europe, and explain its peculiar development in British Columbia.

6. Explain the structure, fossils and geological age of the Lias, Calcaire Grossier, London Clay, and Coralline Crag.

7. Explain the mode of formation and geological age of the Nummulitic and Orbitoidal Limestones.

8. Give a short account of the Pleistocene geology of the vicinity of Montreal.

9. Describe the geological period immediately preceding the age of man —its formations and fossils.

10. To what Geological Formations do the following fossils belong:— *Microlestes*, *Pentacrinus*, *Placodus*, *Hemicidaris*, *Ventriculites*, *Voltzia Inoceramus*, *Baculites*, *Bathygnathus*.—State their affinities.

11. Mention any illustrations of Igneous activity in the Mesozoic and Cainozoic periods in North America.

12. What generic forms and important species finally disappear in the Permian, Cretaceous and Glacial Periods?

Examination in Specimens.

11. Catalogue the Fossils contained in the specimens exhibited (Nos. 1 to 10), and refer them to their respective Geological Formations.

PRACTICAL GEOLOGY.

FRIDAY, APRIL 22ND :—AFTERNOON, 2 TO 5.

Examiner,..... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., Ph.D.

1. What are the principal facts to be recorded in examining a Rock section or exposure?

2. Explain the methods of mapping, and the relations of maps to sections, with an example.

3. What methods are available for discovering and tracing mineral veins?

4. What are the indications of faults when these cannot be actually seen?

5. In the case of the junction of Igneous masses with beds, what facts are most important with reference to conclusions as to age?

6. What are the most important changes occurring in veins and beds near their outcrops.

7. What theoretical conclusions can be formed from false bedding, slaty structure, unconformability.

8. Two formations occurring in the same locality contain—the one *Leptaena sericea, Strophomena alternata, Trinucleus concentricus;* the other, species of *Favosites, Stricklandinia, Spirifer, Pentamerus.* What are their relative ages, and what formations intervene?

9. What are the most important practical points with reference to the occurrence of Metallic minerals in Surface deposits.

LITHOLOGY.

SATURDAY, APRIL 23RD :—MORNING, 9 TO 12.

Examiners,..... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., Ph.D.

1. Name and describe any rocks of which the following minerals are important constituents: Olivine, Garnet, Hypersthene, Leucite.

2. Describe Foyait, Amphibolite and Euphotide.

3. What are the principal accessory minerals found in Mica-Schist, Gneiss and Crystalline Limestone?

4. Classify the Porphyrites, and give their general characteristics. To what rocks are they most closely related?

5. What is the origin of Tripolite, Tachylite, Peperino, and Kaolin?

6. Describe Petrosilex, Quartz-porphyry, Quartz-trachyte, Phonolite. What are the geological relations of these rocks?

7. Give your views with regard to the value of the name Melaphyre.

8. Where do good examples of the following rocks occur in Canada: Dunite, Diorite, Serpentine, Dolomite, Norite, Syenite?

9. What different opinions are entertained with regard to Diabase?

10. Name and describe the rocks exhibited. Classify them according to origin and mineral composition.

FACULTY OF APPLIED SCIENCE.

SECOND YEAR MATRICULATION, 1880.

FRIDAY, SEPTEMBER, 17TH: — MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. In what time will \$2,000 amount to \$3,500, at 6 per cent. Compound Interest?

2. Divide $8a^{\frac{3}{2}} + b^{-\frac{3}{2}} - c + 6a^{\frac{1}{2}}b^{-\frac{1}{2}}c^{\frac{1}{3}}$ by $2a^{\frac{1}{2}} + b^{-\frac{1}{2}} - c^{-\frac{1}{4}}$.

3. Solve the equations:

(*a*) $\dfrac{6x+a}{4x+b} = \dfrac{3x-b}{2x-a}$,

(*b*) $\sqrt{x} - \sqrt{a+x} = \sqrt{\dfrac{a}{x}}$,

(*c*) $\dfrac{x}{x+1} + \dfrac{x+1}{x} = \dfrac{13}{6}$,

(*d*) $\left\{\begin{array}{l} xy = x+y \\ xz = 2(x+z) \\ yz = 3(y+z) \end{array}\right\}$.

4. In a given circle inscribe an equilateral and equiangular pentagon

5. Equal parallelograms which have one angle of the one equal to one angle of the other, have their sides about the equal angles reciprocally proportional.

6. Every solid angle is contained by plane angles, which are together less than four right angles.

7. Prove the following trigonometrical relations :

(*a*) $\cos A = \dfrac{\cot A}{\sqrt{1+\cot^2 A}}$,

(*b*) $1 - \cos A = 2 \sin^2 \dfrac{A}{2}$,

(*c*) $\dfrac{1-\cos A}{1+\cos A} = \tan^2 \dfrac{A}{2}$.

8. Given in a plane triangle, $a = 13, b = 37, A = 18° 55' 28''.7$, find B.

9. A castle stands on a cliff above the sea ; its height is 58 ft.; from the top and bottom of this castle the angles of depression of a ship's hull are found to be 5° 47′ and 5° 08′ ; calculate the ship's distance.

N.B.—*Viva voce* examination at 3.30 P.M.

SECOND YEAR PRIZE EXAMINATION, 1880.

MATHEMATICS.

FRIDAY, SEPTEMBER 17TH: — MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. On the same straight line, and on the same side of it, there cannot be two similar segments of circles, not coinciding with one another.

2. If the vertical angle of a triangle be bisected by a straight line which also cuts the base, the segments of the base shall have the same ratio which the other sides of the triangle have to one another and if the segments of the base have the same ratio which the other sides of the triangle have to one another, the straight line drawn from the vertex to the point of section shall bisect the vertical angle.

3. The areas of the sections of a pyramid made by planes parallel to the base are proportional to the squares of their respective distances from the vertex.

4. A diameter of a parabola bisects all chords parallel to the tangent at its extremity.

5. Reduce to its lowest terms the following fraction:

$$\frac{x^3 - 3x + 2}{x^3 + 4x^2 - 5}.$$

6. Find x and y from the following equations:

$$\left.\begin{aligned} x - \tfrac{1}{7}(y-2) &= 5 \\ 4y - \tfrac{1}{3}(x+10) &= 3 \end{aligned}\right\}$$

$$\left.\begin{aligned} xy &= a^2 \\ x - y &= b \end{aligned}\right\}.$$

7. Find the sine, tangent, and secant of 30°.

8. Prove that

(a) $\cos A = \dfrac{\sqrt{\operatorname{cosec}^2 A - 1}}{\operatorname{cosec} A}$,

(b) $\tan A - \tan B = \dfrac{\sin (A - B)}{\cos A \cos B}$,

(c) $\tan A + \cot A \parallel 2 \operatorname{cosec} 2A$.

9. Given $a = 8214$, $b = 3732$, $C = 61° 53'$, find A, B, and c.

10. A base line of 600 yards was measured in a straight line close to the bank of a river, and at each end of the line the angles were observed between the other end and a tree close to the edge of the river on the opposite side of it: these angles were found to be 52° 14′ and 68° 32′. Find the breadth of the river.

THIRD YEAR EXHIBITION, 1880.

MATHEMATICS, &c.

FRIDAY, SEPTEMBER 17TH: — MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. In any plane triangle

$$\sin \frac{A}{2} = \sqrt{\frac{(s-b)\ (s-c)}{b\,c}}$$

2. The area of a regular polygon of n sides, inscribed in a circle of radius r is

$$\frac{n r^2}{2} \sin \frac{2\pi}{n}$$

3. Find the equation of a straight line which passes through two given points.

4. What geometrical locus is represented by this equation $x^2 + y^2 + 4x - 2y + 7 = 0$? What intercepts does it make on the axes?

5. The sum of the squares of any two conjugate diameters of an ellipse is constant.

6. Differentiate,

$$sin\,(n\,x + a),$$

$$cos\,x\,cos\,(sin\,x),$$

$$\sqrt{\frac{1 + x^2}{1 + x}}$$

7. Integrate,

$$(a\,x^6 + b)\,d\,x,$$

$$\frac{x\,d\,x}{a\,x^2 + b\,x},$$

$$sin\,2\,x\,dx$$

8. Explain how the integral calculus may be employed in finding the areas of plane figures, and apply it to determine the area of a segment of a parabola.

9. The direction of the reaction of a rough surface (when motion is on the point of beginning) is inclined to the perpendicular at an angle equal to the angle of repose.

10. A square is divided into four equal triangles by drawing its diagonals. If one triangle be removed, find the centre of gravity of the figure formed by the three remaining triangles.

11. Find the centre of pressure of a triangle, immersed vertically with its base horizontal, and vertex in the surface of the fluid.

THIRD YEAR EXHIBITION.

MECHANISM.

THURSDAY, SEPTEMBER 16TH, 1880:—9 TO 11 A.M.

Examiner,.....C. H. McLEOD, M.A.E.

1. Describe fully the arrangement of the mechanism employed for the reversal and regulation of valve motion in a locomotive engine.

2. What type of locomotive is best adapted for high speeds? Why?

3. Show that a combination of two Hooke's joints may be used to communicate a *uniform rotation* between two lines of shafting which if produced would meet at a given angle.

4. Show how to shape the teeth of spur wheels in order that the motion transmitted by them may be uniform.

(*a*) A rack is driven by a pinion of 6 inches diameter; the teeth on

both rack and pinion are radial. What are the curves on the points of both sets of teeth, and how are they traced?

5. Explain fully the construction of the teeth on bevil wheels.

6. Show how to obtain the diameters of a set of speed pulleys when these are connected by a short *open* belt.

7. Two radius rods which measure 4 ft. and 5 ft. are connected by a link 4.5 ft. in length. Find the deviation of the parallel point for a movement of 30° by the shorter arm from its mean position.

SESSIONAL EXAMINATIONS, 1881.

FIRST YEAR.

CONIC SECTIONS AND SOLID GEOMETRY,

SATURDAY, FEBRUARY 12TH :—MORNING, 10 TO 12.

Examiner,..... G. H. CHANDLER, M.A.

1. Tangents at the extremities of any focal chord of a conic section intersect on the directrix.

2. The locus of the foot of the perpendicular from the focus on the tangent of a parabola is the tangent at the vertex.

3. The subtangent of a parabola is double of the abscissa.

4. The area of the segment of a parabola cut off by any chord is two-thirds of the area of the triangle formed by the chord and the tangents at its extremities.

5. If a straight line is parallel to a line in a given plane, it is either parallel to that plane, or lies in the plane.

6. Every plane passing through a perpendicular to a plane is also perpendicular to that plane.

7. Find the volume of a frustum of a triangular pyramid, in terms of its altitude and the areas of its parallel faces.

8. Prove that the volume of a sphere of radius r is $\frac{4}{3}\pi r^3$

9. Find the surface of the sphere inscribed in a cube the volume of which is 64 cubic inches.

FIRST YEAR.

EUCLID—ALGEBRA.

MONDAY, APRIL 4TH :— MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. Describe a parallelogram which shall be equal to a given triangle, and have one of its angles equal to a given rectilineal angle.

2. If a straight line be divided into any two parts, the squares on the whole line and on one of the parts are equal to twice the rectangle contained by the whole and that part, together with the square on the other part.

3. On the same straight line, and on the same side of it, there cannot be two similar segments of circles, not coinciding with one another.

4. If two triangles have one angle of the one equal to one angle of the other, and the sides about the equal angles proportionals, the triangles shall be equiangular to one another, and shall have those angles equal which are opposite to the homologous sides.

5. Equal parallelograms which have one angle of the one equal to one angle of the other, have their sides about the equal angles reciprocally proportional.

6. In any right angled triangle, any rectilineal figure described on the side subtending the right angle is equal to the similar and similarly described figures on the sides containing the right angle.

7. Resolve the following expressions into elementary factors :

(*a*) $a^3 x^2 y + 27 x^2 y^4$,

(*b*) $a^4 - b^4 + (a^2 - b^2)^2 - 2a^4 + 2a^2 b^2$,

(*c*) $x^2 - 10 x + 9$,

(*d*) $12 x^2 - x - 1$.

8. Find the greatest common measure of

$$x^3 - 8x + 3 \text{ and } x^6 + 3 x^5 + x + 3.$$

9. Solve the following equations :—

(*a*) $\frac{x}{4} - \frac{5x+8}{6} = \frac{2x-9}{3}$,

(*b*) $\sqrt{x + 4ab} = 2a - \sqrt{x}$,

(*c*) $\frac{x}{x+1} + \frac{x+1}{x} = 2\frac{1}{6}$,

(*d*) $\sqrt{b^2 + ax} - \sqrt{a^2 + bx} = a + b$.

10. Solve the following simultaneous equations :—

$$(a)\quad \left.\begin{aligned} \frac{x+\frac{y}{2}-3}{x-5}+7&=0 \\ \frac{3y-10(x-1)}{6}+\frac{x-y}{4}+1&=0 \end{aligned}\right\}$$

$$(b)\quad \left.\begin{aligned} \frac{a}{x}+\frac{b}{y}+\frac{c}{z}&=3 \\ \frac{a}{x}+\frac{b}{y}-\frac{c}{z}&=1 \\ \frac{2a}{x}-\frac{b}{y}-\frac{c}{z}&=0 \end{aligned}\right\}$$

11. A and B working together can earn 40 shillings in 6 days ; A and C together can earn 54 shillings in 9 days ; and B and C together can earn 80 shillings in 15 days ; find how much each man can earn alone per day.

12. A person drew a quantity of wine from a full vessel which held 81 gallons, and then filled up the vessel with water. He then drew from the mixture as much as he before drew of pure wine, and it was found that 64 gallons of pure wine remained. Find how much he drew each time.

FIRST YEAR.

TRIGONOMETRY [*First Paper*].

THURSDAY, APRIL 14TH :—MORNING, 9 TO 12.

Examiner ; ..... G. H. CHANDLER, M.A.

1. Two angles of a triangle are in magnitude as 2 : 3. If the third angle be a right angle, express the angles of the triangle in degrees and in circular measure.

2. Write down the signs of the sines and cosines of the following angles : 18°, 118°, 218°, 318°, 418°.

3. Find all the trigonometrical ratios for the angle 45°.

4. Prove the truth of the following relations among the functions of any angle x :—

(1. $\dfrac{\tan^2 x}{1+\tan^2 x} = \sin^2 x$,

(2.) $\sec^2 x - 1 = \sin^2 x \sec^2 x$,

(3.) $\tan^2 x + \cot^2 x = \sec^2 x \operatorname{cosec}^2 x - 2$,

(4.) $\operatorname{cosec} x - \cot x = \sqrt{\dfrac{1-\cos x}{1+\cos x}}$

5. Given $\sin A = 0.25$, find $\cos A$, $\tan A$, and $\operatorname{cosec} A$.

6. Prove,

(1.) $\cos(A+B) = \cos A \cos B - \sin A \sin B$,

(2.) $\cos A + \cos B = 2 \cos \frac{A+B}{2} \cos \frac{A-B}{2}$

(3.) $\tan(A-B) = \frac{\tan A - \tan B}{1 + \tan A \tan B}$

7. In any triangle,

$$\cos \frac{A}{2} = \sqrt{\frac{s(s-a)}{b\,c}}$$

8. If A, B and C be the angles of a triangle, prove that $\tan A + \tan B + \tan C = \tan A \tan B \tan C$.

FIRST YEAR.

TRIGONOMETRY (*Second Paper.*)

WEDNESDAY, APRIL 20TH:—MORNING, 9 TO 12.

Examiner, ...G. H. CHANDLER, M.A.

1. Solve the triangles in which are given:

(1) $a = 520$, $A = 66° 2' 52''$, $C =$

(2) $a = 241$, $b = 169$, $C = 15° 22' 37''$.

(3) $a = 212\ 5$, $b = 836.4$, $A = 14° 24' 25''$.

2. The cliffs on a headland are known to be 600 ft. in height: at what distance is a ship from the coast when they begin to appear above the water?

3. Standing at the circumference of a circular enclosure the diameter of whic his 80 ft., I observe that the angle which two entrances into the enclosure subtend at my eye is 34° 40′, what is their distance apart?

4. St. Alban's Head is 18 nautical miles from the Needles, and bears from them W. ¾ N. Sailing from the Needles in a course S. W. b. W. for three hours, I find St. Alban's Head due north; at what distance am I from the Head, and at what rate have I sailed from the Needles?

5. At noon a column in the direction E. S. E. from an observer cast a shadow, the extremity of which lay in a direction N.-E. from him; the elevation of the column was found to be 45°; determine the height of the column, the length of the shadow being 80 feet.

FIRST YEAR.

CHEMISTRY.

WEDNESDAY, APRIL 6TH :—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., Ph.D.

1. What are the necessary conditions of luminosity in flame?

2. Describe the preparation and properties of Phosphuretted Hydrogen, and state what substance results from its combustion.

3. Describe fully the manufacture of Sulphuric Acid, giving equations to represent the chemical changes supposed to take place.

4. Give the composition of the principal ores of Iron, and describe the production of Cast and Wrought Iron from them.

5. Name the principal varieties of Glass, and point out the differences in their composition and properties.

6. Give the composition of Glucose, and explain its conversion into Alcohol.

7. Point out the relationship existing between the Marsh-gas series of Hydrocarbons, the Primary Alcohols, and the Fatty Acids.

8. Name the substances indicated by the following formulas : $C_{10} H_{16}$ $C_{12} H_{22} O_{11}$, $C_2 H_2 O_4$. How may the last one be prepared?

9. By what tests may Arsenic and Copper be detected when in solution?

10. What do you understand by the basicity of an Acid, and the quantivalence of an Element?

11. What are the principal ways in which salts of the metals may be obtained? Give examples.

12. Give the composition of the following substances :—Pearlash, Gypsum, Quartz, German Silver, Dextrin.

FIRST YEAR.

FREEHAND DRAWING.

FRIDAY, APRIL 1ST, 1881 :—MORNING, 9 TO 12.

Examiner,.....C. H. MCLEOD, MA.E.

1. Copy, on a reduced scale, the drawing before you.

2. Fill a circle of 3 inches diameter by an original floral design.

3. Make a drawing of the object before you as it appears from your point of view.

MECHANISM.

WEDNESDAY, MARCH 30TH :—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. Deduce the parallelogram of forces from that of accelerations.

2. A mass of 500 lbs. is acted on by a force of 125 absolute units, what space will it describe from rest in 8 seconds?

What is meant by an absolute unit of force?

3. A body acted on by a uniform force is found to be moving at the end of the first minute from rest with a velocity which would carry it through 10 miles in the next hour. Show that the velocity generated in one second by this force : g :: 1 : 131 nearly.

4. A weight P, descending vertically, draws another weight W up an inclined plane, whose elevation is 30°. Determine the velocity of P after n seconds have elapsed.

5. A body of elasticity e is projected in a direction making an angle α with a smooth horizontal plane. Explain the subsequent motion, and calculate the range and the time which elapses before the body begins to slide on the horizontal plane.

6. A force of 40 lbs. acting parallel to an inclined plane supports 56 lbs. on the plane. The base of the plane being 340 feet, find its length and height.

7. A fly-wheel weighs 20 tons, and turns on an axle 18 inches in diameter, the co-efficient of friction between the axle and its bearings being 0.1. Determine the number of units of work expended on friction in one turn of the wheel.

8. Find the centre of gravity of a triangular pyramid.

9. Find the relation between P and W in the screw.

10. The pressure of water used for working hydraulic cranes is 700 lbs. on the square inch. To what *head* does this correspond.

11. The pressure of liquid on a square is one-fourth the weight of a cube of liquid, whose edge is equal to a side of the square. If one edge of the square be in the surface of the fluid, what is the inclination of the square to the horizon?

12. A body immersed in water is balanced by a weight P, to which it is attached by a string passing over a fixed pulley. When half immersed it is balanced in the same way by a weight 2 P. Prove that the specific gravity of the body is $1\frac{1}{2}$.

SECOND YEAR.

ANALYTICAL GEOMETRY—ALGEBRA.

FRIDAY, APRIL 8TH :—MORNING, 9 TO 12.

Examiner, ...G. H. CHANDLER, M.A.

1. Find the angle between the lines $x + 3y = 1$, and $x - 2y = 1$. Find also the co-ordinates of their point of intersection.

2. What straight lines are represented by the polar equations:

$$r \cos (\theta - \frac{\pi}{3}) = 8, \theta = \frac{\pi}{2}, \theta = 0.$$

3. Find the length of the perpendicular from the point x', y' on the straight line $y = m x + c$.

4. Investigate the formulæ for transformation from rectangular to oblique co-ordinates, the origin remaining unchanged.

5. Find an algebraical expression for the length of the tangent drawn from a given point to a given circle.

6. What is the equation of the circle which passes through the origin, and cuts off lengths 6, 8 from the axes ?
Determine the radius and centre of this circle.

7. Give the definition of a parabola, and from it deduce the equation of that curve.

8. In a given ellipse, half the sum of the focal distances is 4, half the distance between the foci is 3; what is the equation of the ellipse ?

9. Find the equation of the tangent at any point of the ellipse, and hence shew how the tangent may be drawn geometrically.

10. Find the sum of n terms of the geometrical series $a + a r + a r^2 + a r^3$, &c.

11. State the Binomial Theorem, and apply it to find the expansion of $(a - \frac{x}{2})^7$.

12. Assuming that

$$x = 1 + Ax + \frac{A^2 x^2}{1.2} + \frac{A^3 x^3}{1.2.3} + \&c$$

prove that $A = \log_e a$.

SECOND YEAR.

CALCULUS.

MONDAY, APRIL 11TH:—MORNING, 9 TO 12.

Examiner, ... G. H. CHANDLER, M.A.

1 If $y = \frac{u}{v}$, prove that $\frac{dy}{dx} = \frac{v\frac{du}{dx} - u\frac{dv}{dx}}{v^2}$.

2. Differentiate: (*a*) $c\,x^{-3}$, (*b*) $\sqrt{ax} + \sqrt{c^2 x^3}$, (*c*) $(ax - x^2)^{\frac{5}{2}}$

3. Show that

$$(a)\ d\left(\frac{x^2}{\sqrt{1+x^4}}\right) = \frac{2x\ dx}{(1+x^4)^{\frac{3}{2}}},$$

$$(b)\ d\left(\frac{a\,y}{\sqrt{x^2+y^2}}\right) = \frac{a\,x^2\,dy - a\,x\,y\,dx}{(x^2+y^2)^{\frac{3}{2}}},$$

$$(c)\ d\ \log\left(\frac{x}{a+\sqrt{a^2+x^2}}\right) = \frac{a\ dx}{x\sqrt{a^2+x^2}}.$$

4 If the diameter of a circular plate expand uniformly at the rate of $\frac{1}{10}$ of an inch per second, prove that the diameter of the circle will be $\frac{20}{\pi}$ inches when its area is increasing at the rate of a square inch per second.

5. Enunciate Maclaurin's Theorem, and by it obtain the expansion of $\cos x$ in terms of x.

6. Find the altitude of the greatest cylinder which can be cut out of a sphere whose diameter is D.

7. Find the value of the following integrals: (*a*) $\int a x^{\frac{2}{3}}\,dx$ (*b*) $\int \frac{x\ dx}{a+bx}$,

(*c*) $\int (a + bx^2)^2\, x^3\, dx$, (*d*) $\int_o^{\pi} \sin^2 x\, dx$.

8. Prove that the volume of the solid formed by the revolution of the curve $y = f(x)$ about the axis of x is $\pi \int y^2\, dx$.

9. Show that the total area of the curve $a^2 y^2 - a^2 x^2 + x^4 = 0$ is $\frac{4}{3}a^2$, and that the volume of the solid formed by its revolution about the axis of x is $\frac{4}{10}\pi\ a^3$.

———

SECOND YEAR.

DESCRIPTIVE GEOMETRY.

FRIDAY, APRIL 1ST, 1881:—MORNING, 9 TO 12.

Examiner ..... C. H. MCLEOD, MA.E.

1. Draw the cycloid generated by a circle 2 in. in diameter.

2. Find the greatest square which a triangle of 2, 3 and 4 in. sides will contain; a side of the square to lie in the 3 in. side.

3. Project orthographically a cone of 3 in. altitude and base 2 in. diameter when it is cut by a plane making an angle of 60° with the axis, which is bisected; the upper portion of the cone being turned through 180°. (*a*) Show the elevation of this object when the plan of the major axis of section is at 45° to the vertical. (*b*) Show the development of the line of section.

4. Show a plan and elevation of a regular tetrahedron of 2 in. side so placed that one edge which makes an angle of 45° with the vertical is in the horizontal plane, and a side containing that edge makes an angle of 30° with the horizontal.

5. A piece of sheet iron is penetrated by an angle-iron so that the former makes with the outside faces of the latter angles of 60° and 75°. Find the angle which the outside edges of the cut, in the sheet iron, make with each other.

6. A straight rod is inclined to a horizontal surface at 45°, and the sun, when in the vertical plane containing the rod, casts a shadow which meets a vertical wall at an angle of 30°. Find the inclination of the rod to the wall.

7. Two planes are inclined to the horizontal, at angles of 30° and 45°. Their horizontal traces meet at an angle of 75°. Find the angle between planes.

SECOND YEAR.

ESSAY.

MONDAY, APRIL 4TH, 1881:—MORNING, 9 TO 12.

Examiner, ... C. H. MCLEOD, MA.E.

Write an essay on Belting, noticing especially the following:—

(*a*) The circumstances to be considered in determining the advantages to be gained in the use of belting, in any given case.
(*b*) Tensions in belt, under different circumstances.
(*c*) Adhesion; considering character of surfaces in contact.
(*d*) Speed and power transmitted.
(*e*) The different materials employed.
(*f*) Lacing, riveting, &c.
(*g*) As to durability and strength.

SECOND YEAR.

SURVEYING.

MONDAY, APRIL 4TH:—MORNING, 9 TO 12.

Examiner,.....C. H. MCLEOD, MA.E.

1 How would you test the accuracy of a Surveyor's Cross?

2. Calculate the area defined by the subjoined notes, without the aid of a plat:—

	(2)
	340
	(4)
	(2)
0	125
11	90
23	62
12	22
0	(1)

	(3)	
0	360	
6	315	
10	275	
5	215	
0	150	0
	115	10
	80	5
	65	8
	(2)	0

	(4)	
0	135	
15	110	
13	90	
0	50	0
	30	9
	(3)	0

	(3)	
	310	
	(1)	
	(1)	
0	248	
11	180	
0	105	0
	65	5
	(4)	0

3. How would you range a line "by eye" between two points on opposite sides of a valley?

4. Describe the methods known as "radiation," "intersection," and "traversing" in angular surveying.

5. Convert 2.5 arpents into acres.

6. What is "dip"? How is its effect neutralized in the compass?

7. Describe a method of finding the meridian from the pole-star.

8. Describe the permanent adjustments of the engineer's transit. (*a*) Which of these may be omitted when it is not necessary to reverse the telescope?

9. Describe the operation of reading an angle to the nearest 10 seconds when the instrument is only graduated to read 30 seconds.

10. When an optical square has two mirrors, the only condition necessary to its accuracy is that these mirrors make an angle of 45° with each other.

11. What is the only essential adjustment of a level?

12. Show a form of level-notes, and illustrate by example a method of checking reduction.

13. Two points are connected by a series of lines of which the lengths and bearings are known. How would you obtain the length and bearing of the straight line joining the two points?

14. B bears from A N. 75° E, and is 225 ft. distant. C bears from B S. 75° E, and is 383 ft. distant. At points P and Q south of the lines AB, BC, the angle A P B = 45°, A P Q = 90°, P Q B = 30°, and B Q C = 60°. Find graphically the bearing and length of P Q.

SECOND YEAR.

MECHANICAL WORK,

MONDAY, APRIL 4TH:—MORNING, 9 TO 12.

Examiner, ... C. H. McLEOD, MA.E.

1. What evils arise from flexure in shafting? (*a*) What is the limit of flexure adopted in good practice? (*b*) If the modulus of the material be 24,500,000, show that, for round shafting, $d = \sqrt[4]{\frac{S^2 W}{334}}$ where $d =$ diameter in inches; $S =$ distance between bearings in feet; and $W =$ total vertical load at centre in lbs. (Assume $M = \frac{E}{734}$.)

2. How does torsional force affect shafting? What amount and kind of torsional deflection is admissible in a line of shafting?

3. What considerations have led to the construction of "diminishing shafts?" What are the objections to the use of these in ordinary practice?

4. The smoother a pulley and belt, the greater the adhesion. Why is this?

5. What are (*a*) cotton ropes, (*b*) wire ropes, used for in gearing?

6. What is the "arc of contact" in gearing? What must this not be less than? How may the "arc of approach" be made greater than the "arc of recess"? When is such an arrangement advantageous?

7. State the usual relative dimensions of the teeth of wheels.

8. What is the weakest part of a tooth? Show that the breadth of a tooth should be at least twice its depth.

9. What is shrouding, and what is it used for?

10. What is the advantage gained in the use of stepped wheels?

11. What is a "worm" the equivalent of? What is line contact?

12. What considerations govern the dimensions of the arms of wheels?

13. Why have cast gears a "taper" or "draught" to the teeth? What precaution should be adopted in using a pair of such wheels?

14. How would you harden and temper a cold chisel?

15. Mention some of the means adopted to secure uniform results in hardening and tempering where a large number of articles are constantly being treated.

16. What do you understand by internal strain in metals? How may such a condition be relieved?

17. Compare the teeth of a cross-cut and rip saw? How does the character of the wood affect the shape of the teeth of a cross-cut saw.

18. What are the usual "file cuts," and how do they vary with the size of the file?

19. Describe the "oval chuck."

20. How is the horse power of an engine determined? What do you understand by "nominal horse power"?

21. How is the rake and angle of a cutting tool determined? What is the object of side rake?

SECOND YEAR.

MECHANISM.

FRIDAY, APRIL 15TH, 1881:—MORNING, 9 TO 12.

Examiner,.....C. H MCLEOD, C.E.

1. A crank is connected to a piston head by a rod. Obtain an expression for the velocity ratio of the ends of the rod. (*a*) A crank measures 2 feet and its connecting rod 8 feet. Find the velocity ratio when the crank is at an angle of 30° with the direction of the piston rod. (*b*) How does the length of the connecting rod affect the mean pressure of the steam in the *up* and *down* strokes of an engine.

2. Show that a swash plate is the mechanical equivalent of a crank and a connecting rod of infinite length.

3. What is a "half-paul?" Why is it used?

4. Prove that two wheels with involute teeth will have a uniform velocity ratio. (*a*) What are the advantages and disadvantages of this form of tooth.

5. Show how to obtain the teeth of a rack which is to work with a pin-wheel. Which should drive?

6. Explain the construction of Weston's differential pully block.

7. In an epicyclic train of three mitre wheels, the first wheel turns five times per second, and the arm, about which the middle wheel revolves, once per second. Find the number of revolutions which the last wheel makes in one second.

8. Prove that the pantograph may be used to copy parallel motion.

9. Explain and illustrate a feed motion for a drilling machine.

10. Show that the plane which contains the blade of a paddle wheel, as it enters the water, should pass through the summit of the wheel.

11. Explain by an example the meaning of the term "instantaneous axis."

12. Describe the construction of a dead-beat escapement for clocks. Show how the swing of the pendulum is maintained.

13. Show how to apply the double excentric to the reversal of a steam engine.

SECOND YEAR.

ZOOLOGY.

WEDNESDAY, APRIL 13TH:—9 A.M. TO 12.

Examiner,.....J. W. DAWSON, LL.D., F.R.S.

1. State the general characters of the *Protozoa*, and explain their arrangement in Orders, with examples.

2. How would you distinguish an animal of the class *Anthozoa* from a Hydroid or a Polyzoon?

3. State the characters of the *Echinodermata* as illustrated by any common animal of the class.

4. Name the classes of the *Mollusca*, and characterise two of them, with examples.

5. State the characteristic differences of *Annulata*, *Crustacea* and *Arachnida*.

6. State the external structures of Insects, and the stages of their metamorphosis.

7. State the distinctive characters of the class *Aves*, and its division into orders.

8. Give the characters of the *Reptilia*, and the distinction between the Batrachians and Reptiles proper.

9. How is respiration performed in Insects, Tube-dwelling Worms, Lamellibranchiates, and Hydroid Polyps.

10. Characterise, and refer to their places in the system, any three of the following groups:—*Foraminifera*, *Pteropoda*, *Ganoidei*, *Ungulata*, *Asteroidea*, *Alcyonaria*.

11. Describe the specimens exhibited, and state the Provinces and Classes to which they belong.

SECOND YEAR.

PRACTICAL CHEMISTRY.

APRIL 20TH :– 1881.

Examiner,.....DR. GIRDWOOD.

1. Describe the method of separating and estimating *Ba.* and *Ca.*

2. Describe the method of estimating Phosphoric acid, and state what precautions are necessary in the operation.

3. What are the metals precipitated by $(NH_4)_2S$, and how are they separated from one another.

4. Nitrate of Silver solution added to a solution produces a white precipitate, what acid may be present, and how can you determine which?

Practical Work.

What are the acid and base present in substances marked 1, 2?

And in what quantities do they exist?

What is acid and base present in solutions *A*, *B* and *C*?

SECOND AND THIRD YEARS.

ESSAY.

SATURDAY, APRIL 2ND :—MORNING, 9 A.M.

Examiner,.....HENRY T. BOVEY, M.A., C.E.

Write an Essay on Railway grades and curves, with especial reference to the following :—

(*a*) *The increased resistance to motion, and the effect upon the cost of working and maintenance.*

(*b*) *The widening of the gauge and the canting of the outer rail on a curve.*

(*c*) *Methods of easing changes of curvature.*

(*d*) *The establishment of a "ruling" grade, noticing the case of a curve upon a grade.*

(*e*) *The "equated" length in each direction, both for "power" and "cost," of a line from A to B of* 120 *miles, containing* 7,500° *of curvature, and passing through the intermediate stations, C, D, E, F, G.*

From A to C the line rises 15 *feet per mile, and the distance is* 40 *miles.*
" *C to D* " *falls* 35 " " " 15 "
" *D to E* " *rises* 50 " " " 10 "
" *E to F* " *falls* 10 " " " 20 "
" *F to G* " *falls* 25 " " " 15 "
" *G to B* " *rises* 20 " " " 20 "

The average speed may be taken at 25 *miles per hour.*

Also enumerate the principal problems to be dealt with in setting out curves.

SECOND AND THIRD YEARS.

MATERIALS [*Paper I*].

WEDNESDAY, APRIL 20TH:—MORNING, 9 A.M.

Examiners,..... { JOHN KENNEDY, C.E., Ch. Eng. Montreal Harbr. Wks.
HENRY T. BOVEY, M.A., C.E.

1. How is pig iron made? Compare the respective merits of the *cold blast* and the *hot blast.*

2. Describe a *cupola.*

3. What are the qualifications of a good casting? Specify for the cast iron parts (e.g. main pump, valve chambers, pipes, &c.) of a *Pumping Engine.*

4. Classify the different kinds of wrought iron according to the mode of production.
Discuss the ordinary market forms of *Angle* and *Tee* iron.

5. Describe the process of *puddling*; also describe a *puddling furnace.*

6. Explain the manner in which the piles for plates and bars are built up.

7. What should be the characteristics of the *fracture* of good bar and plate iron?

8. Specify the iron most suitable for chain cables, and give an opinion as to the relative value of "*stud*" and "*open*" links.

9. State the *tensile* and *bending* tests for the members of a wrought iron bridge.

10. Describe a method for preventing oxidation, (1)—in the wrought iron of a bridge,—(2) in cast iron pipes.

11. Describe the specimens on the table.

SECOND AND THIRD YEARS.

MATERIALS [*Paper II*].

WEDNESDAY, APRIL 20TH :—AFTERNOON, 2.30 P.M.

Examiners,..... { JOHN KENNEDY, C.E., Ch. Engr. Montreal Harbr. Wks
HENRY T. BOVEY, M.A., C.E.

1. Define *steel;* state the chemical and physical properties which distinguish it from *cast* and *wrought iron.*

2. How is case-hardening effected? What is its object?

3. Give a classification of steel, recognizing the principal modes of manufacture.

4. Describe the *Siemens-Martin* process of manufacturing steel by the addition of scrap wrought iron or steel to molten pig iron.
What are the characteristic differences between the *Siemens-Martin* and *Bessemer* processes?

5. Describe a Siemens' *regenerator.*

6. How is *tool steel* made under the *cementation* process?

7. State the characteristics and chief uses of *mild* steel. Write a *specification* for a steel boiler.

8. What is *compressed* steel? What defects are sought to be overcome by the "compression process"?

9. What are the difficulties to be dealt with in steel *castings?* What are their usual defects?

10. Give a *brief* explanation of the *Thomas-Gilchrist* method of dephosphorizing iron ore. What advantages are claimed for it?

11. Describe the specimens upon the table.

THIRD YEAR. [*Advanced.*]

ANALYTICAL GEOMETRY.

WEDNESDAY, MARCH 30TH :—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. Find the area of a triangle in terms of the co-ordinates of its angular points.

2. Find the equation of the straight line which passes through a given point, and is perpendicular to a given straight line.

3. Investigate the formulæ for transformation from rectangular to oblique co-ordinates, the origin remaining unchanged.

4. If $U = 0$ and $V = 0$ be the equations of two curves show that $U + kV = 0$ will be the equation of another curve passing through all the points of intersection of the first mentioned curves.

5. Find the polar equation to the parabola, the focus being the pole.

6. In the ellipse and hyperbola tangents at the extremities of a diameter are parallel.

7. The rectangle contained by the focal distances of any point on a hyperbola is equal to the square of half the corresponding conjugate diameter.

8. If any chord of a hyperbola be produced to meet the asymptotes, the parts included between the curve and the asymptotes will be equal.

9. Determine the equations to the cycloid, viz., $x = r(\theta - \sin\theta)$, $y = r(1 - \cos.\theta)$

10. Find the condition that a straight line may be parallel to a given plane.

11. Find the equations of a straight line drawn from the origin perpendicular to a given plane, and determine its length.

12. Find the equation to the surface of a prolate spheroid.

THIRD YEAR.—(*Advanced.*)

CALCULUS, &c.

WEDNESDAY, MARCH 30TH:—AFTERNOON, 2 TO 5.

Examiner,..... .....G. H. CHANDLER, M.A.

1. Differentiate the follwing expressions:

(*a*) $(a + b\,x^2)^{\frac{1}{n}}$,

(*b*) $x\ (log\ x)^n$,

(*c*) $\frac{a^x}{1+x}$,

(*d*) $a^{sin\,x} + sin\ a^x$.

Also find the total differential of $tan^{-1}\left(\frac{x}{y}\right)$, where x and y are independent variables.

2. Enunciate Taylor's Theorem.

3. If the altitude of a cone diminish at the rate of 3 inches per second, and the diameter of the base increase at the rate of 1 inch per second, at what rate does the solidity vary when the altitude becomes 18 inches, the diameter of the base at the same instant being 10 inches?

4. Find the value of the fraction $\frac{1 - sin\ x}{cos\ x}$, when x=90o.

5. State and prove the rules for determining the maximum and minimum values of functions of one variable.

6. Determine the dimensions of a cylindrical vessel open at the top which has the least surface with a given capacity.

7. Define curvature, and show that the radius of curvature at a point of inflection is infinite.

8. Find the radius of curvature at any point in the cubical parabola $y^3 = ax$.

9. Integrate

(*a*) $\frac{dx}{(a-x)^5}$,

(*b*) $\frac{x\,dx}{a+bx}$,

(*c*) $\frac{dx}{1+cos\ x}$,

(*d*) $\frac{2\,dx}{x\sqrt{3\,x^2-4}}$.

10. Given the curve whose equation is $a^2 y^2 - a^2 x^2 + x^4 = o$, find its area and the volume of the solid formed by its revolution about the axis of x.

11. Determine the centre of gravity of a segment of a prolate spheroid.

12. Find the moment of inertia of a circular cylinder with respect to its axis.

THIRD YEAR.

SPHERICAL TRIGONOMETRY—PRACTICAL ASTRONOMY.

MONDAY, APRIL 4TH :—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. Prove that in any spherical triangle

$$\text{Cos } a = \cos b \cos c + \sin b \sin c \cos A.$$

2. Write down Napier's Analogies, and point out their use in the solution of spherical triangles.

3. Give the proof of Napier's rules for the solution of right-angled spherical triangles when the complement of the hypotenuse is taken as middle part.

4. Find the semidiameter and horizontal parallax of the moon at 10 p.m., February 12th, 1881, at a place in longitude 65° 24′ W.

5. When will a Leonis (Nautical Almanac, p. 338) cross the meridian of Montreal (longitude = 4 h. 54 m. 13s., latitude = 45° 31′) to-day ?

6. Supposing the observed altitude of the above mentioned star when east of the meridian of Montreal to-day to be 47° 32′ 20″, find the time of observation.

7. Given the sun's declination and altitude and the hour of the day, show how the latitude of the place of observation may be found.

8. How would you find the true value of a lunar distance when the altitudes and apparent distance are given ?

THIRD YEAR.

MECHANICS

MONDAY, APRIL 11TH :—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. Two particles are projected with the same velocity so as to have the same range on the same horizontal plane; compare their times of flight.

2. Two equal forces act at any point in the circumference of a circle, and their directions always pass through fixed points in that circumference shew that their resultant also passes through a fixed point.

3. A B C is a triangular board weighing 10 lbs. Weights of 5 lbs., 5 lbs. and 10 lbs. are placed at A, B, and C respectively. Where is the centre of gravity of the whole ?

4. Find the total pressure on the internal surface of a sphere when filled with water.

5. A vessel contains mercury (sp. gr. 13·6) in which floats a cube of iron (sp. gr. 7.2); water is poured into the vessel until the cube is completely covered; find what portion of the cube is below the surface of the mercury.

6. What is Boyle's Law?

A cylindrical diving bell of height a is sunk in water until it becomes half full. Show that the depth from the surface of the water to the top of the bell is $h - \frac{a}{2}$, where h is the height of the water barometer.

7. V is the volume, t the temperature, and p the pressure of a quantity of gas. These are changed so as to become V', t', and p', respectively. Show that $\frac{V\,p}{460 + t} = \frac{V'\,p'}{460 + t'}$.

8. A sphere of specific gravity 1·25, is placed in a reservoir of water 20 feet deep; show that it will reach the bottom in $2\frac{1}{2}$ seconds (the resistance of the water being neglected).

9. Explain the construction of Sprengel's Air-pump.

10. Explain the principle and use of the Hydraulic Accumulator.

11. A body weighing W lbs. moves in a circle of radius r, with a velocity v; prove that the force which acts on the body is $\frac{W\,v^2}{g\,r}$ lbs.

12. The time of revolution of the conical pendulum is $2\,\pi\sqrt{\frac{l\,\mathrm{Cos}\,a}{g}}$, where l bs the length of the pendulum, and a its inclination to the vertical.

THIRD YEAR.

GEOLOGY.

TUESDAY, APRIL 12TH :—MORNING, 9 TO 12.

Examiners,..... { J. W. DAWSON, LL.D, F.R.S.
B. J. HARRINGTON, B.A., PH.D.

1. State the distribution of the Laurentian and Huronian rocks in North America, and mention their distinctive lithological characters.

2. How is the Cambrian of England represented in Eastern America?

3. Explain the peculiarities of the Quebec group, and its geological relations.

4. How would you distinguish by fossils the Trenton Limestone from the Niagara Limestone, and this from the Corniferous?

5. Describe the Medina, Salina and Oriskany groups, and state theirgeological relations.

6. State the subdivisions of the Carboniferous in Nova Scotia, and mention their characteristic fossils and mineral products.

7. Give in tabular form the subdivisions of the Permian and Trias in Europe, with some characteristic fossils.

8. Describe the several ages of the Cainozoic time in Europe or America, mentioning the more important groups of fossils.

9. What are the geological relations of the coal of Vancouver's Island and the lignite of the Western Territories.

10. Explain the supposed origin of boulder-clay, and the causes of the distribution of boulders.

11. State what you know of the fossils exhibited, and their respective ages.

THIRD YEAR.

LITHOLOGY.

TUESDAY, APRIL 12TH :—AFTERNOON, 2 TO 5.

Examiners,..... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., PH.D.

1. Name the principal rock-forming minerals, and classify them according to chemical composition.

2 Describe Lignite, and point out the principal differences between it and Bituminous coal.

3. Distinguish between sedimentary, eruptive and metamorphic rocks, giving examples of each.

4. Name the members of the Trachyte group, and describe one of them.

5. How would you distinguish Limestone from Dolomite, Quartzite from Felsite, and Tac-Schist from Hydromica-Schist?

6. What are Conglomerates and Breccias? State what you know concerning the origin of such rocks.

7. What are the mineral constituents of Basalt, Norite and Granite? To what groups do these rocks belong?

8. What are Loam, Loess, Marl and Travertin?

9. Define the following terms: Acidic, basic, pumiceous, amygdaloidal, fragmental, microlite, accusory mineral.

10. Name the specimens exhibited, and describe them fully.

THIRD YEAR.

DESCRIPTIVE GEOMETRY.

FRIDAY, APRIL 1ST, 1881:—MORNING, 9 TO 12.

Examiner,.....C. H. MCLEOD, MA.E.

1. The extremities of an edge of a cube are 1 in. and 1.5 in. respectively above the horizontal plane of projection, and a face containing that edge is inclined at 45° to the horizontal. The edges of the cube measure 1.2 in. Draw a plan.

2. The sides of a spherical triangle are 60°, 70° and 80°. Find the angles.

3. There is a cone, the elements of which make angles of 30° with the axis. $\frac{1}{2}$ in. from the axis a plane is passed parallel to it, and the curve thus obtained is revolved about a line which is perpendicular to the axis of the cone and in this plane. Show a plan and elevation of a section of the solid thus formed; when the cutting plane makes an angle of 30° with the horizontal and 75° with the vertical.

4. An ellipsoid is penetrated by a cylinder. The major axis of the ellipse is bisected by the axis of the cylinder and the axes make with each other an angle of 30°. The axes of the ellipse are 2.5 in. and 2 in. in length, and the diameter of the cylinder is 1.5 in. Find the plan and elevation of one curve of penetration.

5. Describe briefly the method of axometric projection.

6. Describe the equidistant-polyconic method of map construction.

7. Find the shade and shadow caused by rays which make angles of 30° and 45° with the horizontal and vertical planes respectively, and fall on a hollow frustrum of a cone having a base of $1\frac{1}{2}$ in., a top of 2 in. diameter and a slant height of 3 in.

8. Project perspectively the object in question 7, and find the perspective of its shade and shadow, the light being in the same direction.

9. Project perspectively a regular tetrahedron when 4 ft. on the left and 5 ft. within the picture.

10. Prove the method employed for measuring distances within the picture, in perspective.

THIRD YEAR.

SURVEYING.

THURSDAY, APRIL 7TH:—MORNING, 9 TO 12.

Examiner,.....C. H. MCLEOD, Ma.E.

1. How would you adjust a transit-theodolite, to measure altitudes. (*a*) Compare this instrument with a sextant as applied to the measurement of altitudes.

2. How is the sextant placed in adjustment? (*a*) How is the index-error obtained, and how can it be eliminated?

3. At a station A the angle between points B and C and is observed, with sextant, to be 45° 30′. The inclination of A B is 15° and of A C 25°. Calculate the horizontal angle.

4. Describe the operation of setting a "grade-peg." (*a*) When would you give two pegs at the entrance to a cutting, and where would you place them?

5. Describe, briefly, a method of conducting a contour-survey.

6. Obtain an expression for the difference in elevation of two points, when the distance between them and the angle of altitude or depression at both stations is known. (*a*) The angle of elevation of A as observed from B is 1° 18′; the depression of B from A is 1° 42′ and the horizontal distance between A and B is 34.5 miles. Calculate the difference in elevation between A and B.

7. Describe and illustrate the construction of the aneroid barometer.

8. State, in the order in which they would be carried out, the different operations necessary to complete a harbour survey ; no survey having previously been made in the locality. (*a*) Describe, in detail, the sounding of a harbour.

9. Calculate the angles between the sides and the base of a block of four townships, in the N. W. Land's Survey. The ends of the base being in the 49th parallel of latitude.

10. The sum of the angles of a spherical triangle is found to exceed their calculated value by 2″. 4. The angle A is the mean of 20, B of 30, and C of 40 observations. Calculate the correction to be applied to each angle, other circumstances being similar.

11. Describe the construction and use of the heliotrope.

12. Calculate the azimuth of *polaris* when at its greatest eastern elongation, to-day.

THIRD YEAR.

APPLIED MECHANICS [*Advanced*].

FRIDAY, APRIL 22ND :—MORNING, 9 A.M.

Examiner,.....HENRY T. BOVEY, M.A., C.E.

1. The accompanying sketch represents a full-size section of the steel rails for the Hamilton and North Western Railway. Determine the *effective area*, the *effective depth*, and the *weight* of a rail per lineal yard. The tensile *elastic limit* is 50 per cent. of the ultimate tensile strength, and this latter is specified at 35 tons per sq. in. ; what is the *transverse* strength of the rails on 3 ft. 6 in. bearings?

Also find the greatest deflection that can be produced under a central weight without "*permanent set*."

2. A_1, A_2, A_3, and h_1, h_2, h_3 are the respective areas and depths of the top flange, web, and bottom flange of a wrought iron girder ; find the position of the neutral axis, and the value of I.

At the centre of a wrought iron girder $\frac{A_1}{A_3} = \frac{4}{5}$, and $A_1 + A_3 = 2\ A_2$; also the depth ($= h_2$) is 48 ins., the thickness of the web is $\frac{1}{2}$-inch, and the flanges are each 20 ins. wide ; determine the Bending Moment consistent with the condition that the stress in the bottom flange is not to exceed 5 tons per sq. in.

3. Prove that the moment of resistance to torsion of a square shaft is $\frac{f.\ h^3}{3\sqrt{2}}$, where ($h$) is a side of the square, and (f) the stress at a point farthest from the axis.

Also shew that the torsional strength of a square shaft is approximately 21 times as great as that of a round shaft, whose diameter is equal in length to the side of the square.

4. A girder of length (l) resting upon two supports, carries a load whose intensity varies *continuously*, and is $wf(x)$ at a point distant (x) from the origin. If M and S are the Bending Moment and Shearing Force at the same point, shew that,

$$\frac{dM}{dx} = S = \frac{w}{l} \cdot \int_o^l x \cdot f(x) \cdot dx - w \cdot \int^x f(x) \cdot dx.$$

Hence determine the position and value of the max. Bending Moment when $f(x) = x$.

Explain how the above relations may be made to apply to the case of a girder supporting single weights at different points.

5. A beam of constant section deflects under a vertical load, shew that its *resilience* between any two sections $= \frac{1}{2.E.I} \cdot \int M^2 \, dx$, the integration depending upon the limits and the manner of the loading.

A beam rests upon two supports, determine its *resilience*;—

(1) When loaded uniformly with a weight W;

(2) When loaded at the centre with a single weight, producing the same deflection as in (1).

6. One end of a beam is *fixed* and the other merely rests upon a support. A single weight W rolls over the beam, determine the form assumed by the neutral axis when W is at a distance (r) from the free end, and shew that the "*moment of fixture*" is $\frac{W}{2} \cdot r \cdot \left(1 - \frac{r^2}{l^2}\right)$.

Draw *diagrams*, giving the max. Bending moment and Shearing Force at each point of the beam.

7. Explain what is meant by a continuous girder. State its practical advantages and disadvantages.

A continuous girder of two equal spans, each 100 ft. in the clear, rests upon side abutments and a central pier. The girder is subjected to a dead load of 500 lbs. per ft. run and a live load of 1400 lbs. per ft. run.

Design the section for which the Bending Moment is a *max.*, and determine the *points of inflexion* and the *points of greatest deflection*, (1).—When both spans are covered by the rolling load, (2).—When one span only is covered.

8. Draw *Bending Moment* and *Shearing Force* diagrams for the girder in Question (7).

9. Enunciate the *Theorem of three moments*.

A river is crossed by a *continuous girder* bridge of *six* equal spans. Each main girder carries a uniformly distributed load of (w) lbs. per ft. run, and is *fixed* on the centre pier ; determine the *re-actions* at each pier.

10. A girder (l) ft. in the clear rests upon piers, and carries a dead load of (w) lbs. per ft. run, and a live load of (w') lbs. per ft. run. In one design the girder has *free* ends, in another is *continuous*, and in a third is *imperfectly continuous*, the central bending moment being made equal to $\frac{w + w'}{16} \cdot l^2$; hew that the end *slopes* are in the ratio of $1 : \frac{1}{4} : \frac{1}{2}\left(1 + \frac{w'}{w}\right)$ respectively.

BACHELOR OF APPLIED SCIENCE.

MATHEMATICS.

TUESDAY, DECEMBER 21ST, — MORNING : 9 TO 12.

Examiner,..... .....G. H. CHANDLER, M.A.

1. Prove that

$$tan\ (A + B) = \frac{tan\ A + tan\ B}{1 - tan\ A\ tan\ B}.$$

(*a*) Hence deduce the value of $tan\ 2\ A$ and of $tan\ (A - B)$.

2. How would you calculate the area of a triangle

(*a*) When two sides and the included angle are given?

(*b*) When the three sides are given?

3. The area of a regular polygon of n sides described about a circle of radius r is $n\ r^2\ tan\ \frac{\pi}{n}$.

4. Find the length of the perpendicular drawn from the point (3, 1)

(*a*) To the line $7x - 2y = 3$,

(*b*) To the tangent at the point (2.6) on the circle $(x - 2)^2 + (y - 3)^2 = 9$.

5. Show that the equation $2\ (x^2 + y^2) + 3\ (x - y) = 7$ represents a circle, and find its centre and radius.

6. Given the area of a figure in a certain plane, how would you find the area of the projection of the figure on another plane ? Apply this method to find the area of an ellipse.

7. Show that

$$\frac{d}{dx}\left(\frac{x-a}{x+a}\right)=\frac{2a}{(x+a)^2},$$

$$\left(\frac{d}{dx}\frac{1-\tan x}{\sec x}\right)=-(\cos x+\sin x).$$

8. If $y=\frac{1}{x}$, prove the relation

$$\frac{dy}{\sqrt{1+y^4}}+\frac{dx}{\sqrt{1+x^4}}=0.$$

9. Given the equation $y=(x-1)(x-2)(x-3)$, determine;—

(*a*) The general form of the curve which it represents.

(*b*) Where it cuts the axes.

(*c*) Its maximum and minimum ordinates.

(*d*) Its point of inflexion.

(*e*) The equation of the normal at $(x, y,)$.

(*f*) The area bounded by the curve and the part of the axis of x between $x=1$ and $x=2$.

BACHELOR OF APPLIED SCIENCE.

MATERIALS.

MONDAY, DECEMBER 20TH, 1880:—MORNING, 9 O'CLOCK.

Examiner.....HENRY T. BOVEY, M.A., C.E.

1. Carefully describe the mode of "mixing" and "laying" ordinary building mortar. How would you test its quality? Why is no mortar laid beneath window sills at the first?

2. Why is it inexpedient and unsafe to continue building operations during the winter?

3. Describe, *with the necessary sketches*, coursed rubble masonry.

4. What is the object of the rear batter at the top usually given to Canadian Dock and Lock walls?

5. Distinguish between the Pig-irons known as Bessemer, Foundry, and Forge. What quality of Pig is generally used for the manufacture of iron suitable for girder-making? Why?

6 What considerations regulate the "form" of castings? Exemplify your answer.

7. What are the properties and uses of malleable cast iron?

8. What is the effect of "rolling" iron? Describe in detail the manufacture of a Phœnixville Best Best Bar, and shew how to estimate the percentage of impurity in it due to a single inferior puddled bar.

9. Explain the meaning of the terms:—"Puddling, Shingling, Bloom, Pile." How should T and rail piles be built up?

10. Enunciate the tests, (*a*)—for a cast iron girder, (*b*)—for the tension members of a wrought iron bridge, (*c*)—for a 60 lb. steel rail.

11. How would you judge of the quality of plate iron by its appearance and behaviour under treatment?

12. Give some definition of steel. State the characteristics and uses of cast steel.

13. Draw up a table of "factors of safety" for use in wrought iron and steel constructions.

14. Describe the specimens upon the table.

BACHELOR OF APPLIED SCIENCE.

DESIGN.

JANUARY, 1881.

Examiners,..... ..... { JOHN KENNEDY, C.E., Chief Engr. of Montreal Harbour Works. HENRY T. BOVEY, M.A., C.E.

Design one of the following:—

(A) A roof for a clear span of 100 feet.

The structure may be wholly of iron, *or* of timber with wrought iron tension members.

Data.—Pitch of roof = 30°.

Weight of roof covering = 10 lbs. per square foot.

Wind pressure normal to covering = 26 lbs. per square foot.

The principals to be 12 or 25 feet centre to centre.

(B) A single track Bridge, of the Howe *or* Warren type, for a clear span 200 feet.

Data.—Depth = 25 to 35 feet.

Live load = 2500 lbs. per foot run.

Write out a specification of the structure you design, and estimate its cost.

N.B.—The designs, &c., are to be handed in not later than March the 26th, 1881.

BACHELOR OF APPLIED SCIENCE, THIRD AND SECOND YEARS.

RAILWAY WORK [*Paper I*].

MONDAY, APRIL 25TH:—MORNING, 9 A.M.

Examiners, ... { JOHN KENNEDY, C.E., Chief Eng. Mont. Hbr. Wks. / HENRY T. BOVEY, M.A., C.E.

1. Describe, *briefly*, how you would keep a field-book for chain surveying, and give reasons for all the notes you would deem it necessary to make.

There are *five* stations, no *three* of which are in the same straight line; what lines must be measured:—(1).—To give the positions of these points? (2).—To check the work? (3).—To find in which line an error may have been made?

2. It is required to stake out a compound curve connecting two points P and R, from the following *data*:—"The curve consists of two circular arcs $P\,Q$, $Q\,R$, whose respective radii are 840 ft. and 525 ft., and which subtend angles of 15° and 60° at their respective centres; the *first* stake is 85 ft. from P."

3. In Question (2) the points P, Q, R and the *secant* point S of $Q\,R$ are four level stations; the successive stakes from P are maked a, b, c, d, e, f, g; the sight taken from P to a is 12.45, from P to b is 5.37, from Q to b is 11.37, from Q to c is 8.92, from Q to d is 2.10, from Q to e is 10.2, from S to e is 13.23, from S to f is 5.27, from S to g is 1.85, from R to g is 8.12; make up a level book and reduce the levels.

4. A Railway embankment 500 ft. in length is to be formed of a clayey soil which shrinks about 10 per cent.; the regular cuttings furnish only $\frac{1}{3}$ths. (loose) of the total cube required, and the remainder has to be made up by "borrowing" loam which shrinks about 12 per cent.; determine the total quantities of "clay" and "soil." The embankment is on level ground, the slopes are $1\frac{1}{2}$ to 1, the top width is 13 ft., and the central depths in feet at successive 100 ft. sections are, 0, 15, 10, 12, 25, 0.

5. The average "*haul*" in Question (4) is 1200 ft.; how many days of 10 hours will it take to deposit "*in situ*" the whole of the material? It may be assumed that each trip occupies $\left(4 + \frac{\text{"the haul"}}{100}\right)$ minutes.

Also if the total cost of horse, cart and driver is $1.25 per day, find the "*cost of hauling*" per cube yd., to the contractor.

6. Describe the method of fixing the *slope* stakes on sidelong ground.
A 20-ft. road bed is to be made on ground with a 5 to 1 sidelong slope, and the central depths of certain two cross-sections are 12 ft. and 1 ft.; determine the corresponding *areas*, the earth work slopers 1 ring 2 to 1.

7. What are the principal requirements of a permanent way?

8. What is the object of *ballast?* What is the best *kind?* What is the best *form* to give it in the track?

9. Write a specification for *ties*, and for *laying* the same in the permanent way.

10. Discuss the "durable" properties of the various timbers for ties, and remark as to the modes of preservation.

11. Give a standard sketch of a cross section of permanent way, *with all necessary dimensions*, (1).—For cuttings, (2).—For embankments.

12. State any arguments which may be brought forward in favour of a *longitudinal* system of sleepers, and illustrate your answer by reference to some good example of such.

———

BACHELOR OF APPLIED SCIENCE, THIRD AND SECOND YEARS.

RAILWAY WORK [*Paper II*].

MONDAY, APRIL 25TH :—AFTERNOON, 2.30 P.M.

Examiners,..... { JOHN KENNEDY, C.E., Ch. Engr. Mont. Hr. Wks.
HENRY T. BOVEY, M.A., C.E.

1. What are the chief requirements of a good rail? State the advantages of *steel* over *iron* rails.

2. Describe, *with sketches*, the principal rail sections in use. Compare the merits of *flanged* and *double-headed* rails.

3. Specify for the *quality* and *strength* of a steel rail.

4. What are the qualifications of a good rail joint. Describe *two* principal forms.

5. Give a detailed description of the two most important types of switches, and state their respective advantages and disadvantages.

6. Describe the two standard forms of "*frogs*," and explain how their dimensions are regulated.

———

BACHELOR OF APPLIED SCIENCE AND THIRD YEAR.

APPLIED MECHANICS [*Paper I.*]

FRIDAY, APRIL 8TH:—MORNING, 9 A.M.

Examiner, ...HENRY T. BOVEY, M.A., C.E.

1. Carefully explain the meaning of the terms:—"*Coefficient of Elasticity*," "*Limit of Elasticity*," "*Set*," "*Proof Stress*," "*Proof Strain*," *Resilience*," and shew that the Resilience of a bar (l) ft. long and (a) sq. ins. in section is $\frac{f^2}{2.E} \cdot a.\ l.$, ($f$) being the proof stress, and (E) the coefficient of elasticity.

A steel bar, 10 ft. long, has to transmit 2,000 ft. lbs., what must be its sectional area? The proof strain of the steel $= \frac{1}{800}$, and $E = 32{,}000{,}000$.

2. A timber pile is 144 sq. ins. in section, and has a length of 12 ft. above ground. If the stress upon the pile is not to exceed 3,000 lbs. per sq. in., find the greatest height from which a weight of 3,600 lbs. may let fall upon the head: (1)—When the compression is neglected, (2)—When it is taken into account, (3)—If the pile sink ½-inch under the blow. ($E = 1\ 200{,}000$.)

3. Prove the relations,

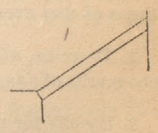
$$\frac{f}{c}.\mathrm{I} = \mathrm{M} - \frac{E}{R}.\mathrm{I},$$

and hence shew how to find the position of the neutral axis of a beam of depth (d), in which the top and bottom unit stresses are f_1 and f_2 respectively.

The flanges of a rolled joist are each 4 ins. wide and ½-inch thick; the web is 8 ins. deep between the flanges, and ½-inch thick. If the inch-stresses are 5 tons in tension and 4 tons in compression, find the position of the neutral axis.

4. If the joist in question (3) rest upon two supports, 20 ft. apart, what weight, uniformly distributed, will it safely carry?

5. A rafter 30 ft. long, rectangular in section, and inclined at an angle of 30° to the horizon, is supported as in Fig. It carries a uniformly distributed load of 9,000 lbs., and a single weight of 1,000 lbs. in the centre. Find the *breadth* of the rafter, the *depth* being 8 ins., and the *safe* inch-stresses in the outside fibres 670 lbs. Also determine the *greatest total longitudinal* unit stresses in the fibres at points distant 10, 15, and 20 ft. from the upper end.



6. Draw Bending Moment and Shearing Force Diagrams for the rafter in question (5).

7. A boiler-plate tube, 36 ft. long, 30 ins. inside diameter, weighs 4,200 lbs. and rests on two supports 33 ft. apart. What must be the thickness of the plate, if the stress is nowhere to exceed 600 lbs. per sq. in.?

What additional weight may be suspended from the centre, consistent with the condition that the stress in the metal is nowhere to exceed 10,000 lbs. per sq. in.?

8. How would you proceed to design a girder whose weight forms a considerable portion of the total load?

Apply your method to the design of a flanged girder for a clear span of 50 ft., which is to support a load of 1500 lbs. per ft. run *in addition* to its own weight.

9. Shew that within a body in a state of simple strain, "*The Shearing stresses upon any two planes at right angles to one another are of equal intensity, and the sum of the intensities of the normal stresses is equal to the intensity of the primary stress which produces strain.*

A solid cast iron pillar 4 ins. in diameter supports a load of 55,000 lbs.; find the intensities of the shear and normal stresses upon a plane inclined at 30° to the axis, and explain why there is a tendency in pillars to shear along planes inclined at 45° to the axis.

10. Enunciate and prove Gordon's Formula.

The pillar in Question (9) is 9 ft. in length, determine its breaking weight, and state in what manner it may be expected to fail.

$$(a = \frac{1}{325}, f = 80{,}000.)$$

How is the strength affected by the *form* and *condition* of the ends?

11. If W be the work transmitted by a shaft making N revols. per minute, shew that $\frac{W}{N}$ is proportional to the twisting couple.

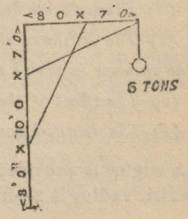
A turbine makes 114 revols. per minute and transmits 92 H.P. through the medium of a steel shaft 8 ft. 6 ins. in length. Find the diameter of the shaft, the total torsion of which is not to exceed $\frac{2}{3}°$. $(E = 32{,}000{,}000.)$

PAPER II.

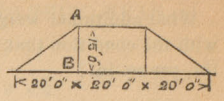
FRIDAY, APRIL 8TH:—AFTERNOON, 2.30 P.M.

1. A crane trussed as in Fig. lifts a weight of 6 tons, determine the stresses in all the members.

What must be the diar. of the crane post at the foot, the post being round and of solid wrought iron?



2. The platform of bridge for a clear span of 60 ft. is to be carried by two timber trusses of the form shewn in the Fig., and the total load is 600 lbs. per ft. run. Determine the proper sizes of the different members, the safe working stres being 600 lbs. per sq. in.



3. Make working sketches of the joints at *A* and *B*.

4. If the truss in question (2) be inverted, what changes will it be necessary to make in the design?

5. Design a plate iron girder for a span of 80 ft., to carry a *total* dead load of 30 tons, and a live load of 1 ton per foot run.

6. Make a working sketch with all necessary dimensions of the central section of the girder in Question (5),—(1) For a single web, (2) For a double web.

Also determine the number of rivets required per running foot at the centre for fastening the web to the flange angle-irons.

BACHELOR OF APPLIED SCIENCE.

ESSAY.

SATURDAY, APRIL 2ND :—MORNING, 9 A.M.

Examiner,.....HENRY T. BOVEY, M.A., C.E.

Write an essay upon the Slide Valve with especial reference to the following :—

(*a*) *The action of the steam, and the use of "angular advance," "lap," and "lead."*

(*b*) *The means of reducing the friction between the valve face and seat.*

(*c*) *The object of "variable" expansion, with a short résumé of the principal systems by which it is obtained, noticing their respective advantages and disadvantages.*

(*d*) *Zeuner's method of determining the motion of:—*

(1) *The ordinary slide valve?* (2) *An expansion valve, with a statement of the manner in which the latter should be "set," and the reasons why.*

(*e*) *The effect of the obliquity of the connecting rod.*

(*f*) *The detailed construction of the gridiron valve.*

An engine is provided with an ordinary three-ported slide valve, whose, eccentric radius is 2—ins. in length; steam is cut off at $\frac{1}{6}$th of the stroke

compression is to take place through $\frac{1}{8}$th of the stroke, and the "angle" of lead is 2°. Find the angle of advance, the steam and exhaust laps, and describe the motion of the valve.

An expansion valve with a $2\frac{1}{4}$ inch eccentric radius is to be added; how should it be set, so as to cut off steam simultaneously with the slide valve?

BACHELOR OF APPLIED SCIENCE.

STEAM AND THE STEAM ENGINE.

PAPER I.—(*Theory.*)

WEDNESDAY, APRIL 6TH:—MORNING, 9 A.M.

Examiner,..... HENRY T. BOVEY, M.A., C.E.

1. What is the relation between the pressure, volume, and temperature of a perfect gas?

A closed boiler is partly filled with water, and partly with a mixture of air and vapour at a pressure of 14.7 lbs. per sq. in., the temperature of the whole being 32° F. If the water be kept at a constant level, and if the temperature be raised to 180° F., determine the final pressure of the air. (The initial pressure of the vapour = .089 lbs. per sq. in.)

2. What is meant by the *specific heat* of a substance?

In what respect does the *real* differ from the *apparent* specific heat, and how does the former vary with the temperature?

Prove that for a perfect gas:—

$$c_p - c_v = \frac{p.\ v.}{J\ w.T.}$$

3. The specific volume of saturated steam at a temperature of 212° F. and a pressure of 14.7 lbs. per sq. in. is 3881 cubic feet, and the specific heat at constant volume .37. Shew that, if the saturated steam be assumed to behave as a perfect gas, the pressure and volume are connected by the relation $p.\ v^n = \text{const.}$, where $n = 1.29$.

4. Explain the meaning of the terms: *Heat of Evaporation*, *Latent Heat of Evaporation*, *Total Heat of Evaporation*, and write down an approximate formula for obtaining the number of units of heat required to evaporate under the atmospheric pressure, and at a temperature of $T°$, a pound of water taken at a temperature of $t°$.

Steam enters the condenser of an engine at a temperature of 212° F., and for every pound of steam 16 lbs. of water at a temperature of 40° F. is injected, determine the temperature of the water pumped out of the condenser.

O

5. Prove that the efficiency of a reversible heat engine between given limits is the greatest possible, and is equal to $\frac{T_1 - T_2}{T_1}$, T_1 & T_2 being the initial and final absolute temperatures.

6. An engine with a 16-inch cylinder and a 36-inch stroke was originally worked at a low pressure of $18\frac{1}{2}$ lbs. per sq. in., without expansion. Subsequently the steam was used expansively, being cut off at *one-fifth* of the stroke, the pressure at admission was increased to $35\frac{1}{2}$ lbs. per sq. in. and a condenser with a back pressure of $2\frac{1}{2}$ lbs. per sq. in. was added. Shew by *a sketch* the consequent alterations in the original Indicator Diagram, and estimate the gain or loss of work resulting from each change as well as the total gain. ($\log_e 5 = 1.6094$.)

Point out the practical limits to prolonged expansion and high pressure.

7. What is *wire-drawn* steam?

The absolute boiler pressure in question (6) being 66.4 (51.7 + 14.7) lbs per sq. in., the steam was at first wire-drawn to 33.2 (18.5 + 14.7) lbs. per sq. in., and was admitted at this pressure throughout the whole stroke. Determine the heat developed per stroke. How much heat is saved by using the steam expansively? The feed-water has a temperature of 60° F.

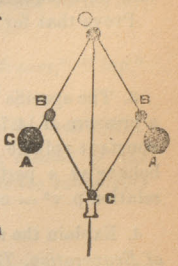
{ *wt. of cub. ft. of steam at abs. pr. of* 66.4 *lbs. per sq. in.* = .156 *lbs.* }
{ *wt. of cub. ft. of steam at abs. pr. of* 50.2 *lbs. per sq. in.* = .12 *lbs.* }

8. What are the different states in which water may be found in the cylinder of a steam engine? What are their respective effects upon the efficiency?

Describe the action which takes place between the steam and the side of the cylinder.

9. Explain the action of the *common pendulum governor*.

If the slide C move up and down twice as fast as the balls A, shew that the centres of the balls must coincide with B (O B C B being a rhombus). In a certain engine the vertical depth of A below O is 2.4 ft., and OC = 3 ft., find the number of revolutions per minute, and the height through which C will rise for a change of 2 per cent. in the angular velocity.



10. How may the friction be taken into account in question (9)?

The weight of each ball is 120 lbs.; the force required to overcome valve friction is 5 lbs., and to a 2-inch displacement of the valve corresponds a 1-inch displacement of the slide; determine the corresponding change in the angular velocity.

11. The area of the piston of a single cylinder high pressure engine is 230 sq. ins., the length of the stroke is 36 ins., the average *effective* pressure is 25 lbs. per sq. in., and the number of revolutions per minute is 60; what is the H. P. of the engine?

If the engine consume 200 lbs. of coal per hour, and if the heat generated by the combustion of 1 lb. of coal is capable of converting 16 lbs. of water at 180° F. into steam at the same temperature, how much per cent. of the heat generated is converted into useful work by the engine? ($J = 772$).

12. Why is it that the calculation of the work of an engine on the assumption of Mariotte's Law does not agree with practice?

What allowances should be made?

If (p) be the pressure at admission, (p_3) the back pressure, (r) the rate of expansion, and $p.\ v^n = \text{const.}$ the curve of expansion, shew that the *average effective pressure*,

$$= \frac{p_1}{n-1} \cdot \left\{ \frac{n}{r} - \frac{1}{r^n} \right\} - p_3$$

BACHELOR OF APPLIED SCIENCE.

STEAM AND THE STEAM ENGINE.

PAPER II.—(*Construction.*)

WEDNESDAY, APRIL 6TH:—AFTERNOON, 2.30 P.M.

1. Describe the construction of a steam cylinder. How are the cylinder heads attached?

Taking 5000 lbs. per sq. in. as the *safe* working stress, determine the number of $\frac{7}{8}$-inch bolts required for the head of a 28-inch cylinder, the steam pressure being 75 lbs. per sq. in.

2. How is the piston made to work steam-tight in the cylinder?

3. Shew how the piston and connecting rods are attached to the cross-head.

What must be the diameter of a piston rod for an engine with a 16-inch cylinder, a 36-inch stroke, a steam pressure of 35 lbs. per sq. in., and making 72 revolutions per minute. (*Ultimate strength of wrought iron* = 31000 *lbs. per sq. in.*; *factor of safety* = 10.)

Discuss the various stresses to which such a rod is subjected.

4. What considerations govern the proportions of crank-pins?

What expedients are adopted to prevent the heating of the bearings?

5. Give sketches of a crank from two points of view.

What advantages are to be gained by the employment of more than one crank?

If double cranks are used, discuss the value of the "*twisting couple*" of the crank shaft throughout one revolution.

6. A flywheel weighs 24,000 lbs., is 20 ft. in diameter (mean), and makes 50 revolutions per minute. Determine the area of a cross-section of the rim, and also the "*co-efficient of steadiness*," the extreme variation of the velocity being 2 per cent.

How should such a wheel be constructed?

BACHELOR OF APPLIED SCIENCE.

HYDRAULICS [*Paper I*].

TUESDAY, APRIL 12TH :—MORNING, 9 A.M.

Examiner,.....HENRY T. BOVEY, M.A., C.E.

1. Shew that, *with certain limitations*, water issuing from an orifice (h) ft. below the surface of a reservoir will acquire a velocity of $\sqrt{2\,g.\,h.}$ ft. per second.

The vacuum pressure of a condenser is 12.7 lbs. per sq. in., and the head of the supply water above the injection orifice is 14 ft.; determine the area of the orifice so that (*neglecting* friction, &c.,) 16 cube ft. of water may enter the condenser per minute.

2. Carefully explain how Torricelli's Theorem is made applicable in practice to the case of an orifice of somewhat considerable dimensions.

One of the Locks on the Lachine Canal has a superficial area of about 12,150 sq. ft., and the difference of level between the surfaces of the water in the Lock and in the upper reach is 9 feet. Each leaf of the gates is supplied with one sluice, and the water is levelled up in 2 min. 48 sec.; determine the proper area of the sluice opening.

3. Obtain an expression for the discharge over a weir, when the stream has a sensible velocity of approach.

State precisely the assumptions you make, and also the practical precautions necessary in the measurement of the discharge when the flow is irregular or subject to eddy motion.

4. A stream 80 ft. wide by 4 ft. deep discharges across a vertical section at the rate of 640 cub. ft. per second; a weir is built in the stream increasing its depth to 6 ft.; find the height of the weir.

5. Water flows uniformly through a pipe of constant diameter, write down an expression for the total "head" at any point. Hence determine the diar. of a clean iron pipe 5000 ft. in length, which connects two reservoirs having a total head of 40 ft., and discharges into the lower at the rate of 20 cub. ft. per second.

Draw the "Line of Charge."

6. Describe some method of measuring the "resistance to flow" in the mains of "public water supplies."

What is the effect of suddenly throttling the discharge? What provision should be made for this in practice?

7. *Briefly* describe Darcy's experiments on the resistance in pipes to the flow of water, and explain how they have modified the previously accepted laws.

8. Water flows through a pipe whose diameter varies *continuously*, shew that the *head* at a point distant (s) from the origin is,

$$\frac{Q^2}{2624 \cdot \pi^2} \cdot \int_0^l \frac{ds}{r^5}$$

Hence shew that the discharge at the end of a "piping," consisting of a number of sections of different diameters, is independent of the order in which the sections are arranged. Is this rigorously true? Why?

9. How is the velocity of a stream in an open channel of uniform section affected by friction and by the H.M.D.?

Why does the water of the St. Lawrence rise on the formation of the ice?

10. In Lake St. Peter on the River St. Lawrence, a submerged canal has been cut 25 ft. below the surface of low water. The canal is 480 ft. wide at the top, 300 ft. wide at the bottom, 12 ft. deep, and in one part of its course runs through stiff boulder clay, the fall being 1 in 20,000; determine the velocity of flow across a vertical section of *the canal.*

11. Two reservoirs at different levels are connected by a uniform piping, at the lowest point of which is a sluice valve. Discuss *graphically* the variation in the flow, as the valve from being closed is gradually opened to its fullest extent. Of what *practical* use is the lower reservoir?

[*Paper II.*]

TUESDAY, APRIL 12TH:—AFTERNOON, 2.30 p.m.

1. Discuss, *in full*, the proper form to give to the buckets of an *overshot* water wheel.

What practical means are adopted to ensure that the water shall enter the bucket in the right direction?

2. A 30 ft. wheel weighs 24,000 lbs. and makes 6 revolutions per min. its gudgeons are 6 ins. in diar., and the coeff. of friction is .08. The water enters the wheel with a velocity of 15 ft. per second, and in a direction

making an angle of 10° with the direction of motion of the wheel at the point of entrance. The deviation from the summit of the point of entrance is 12°, of the point where spilling begins is 150°, of the point where all is spilt is 160°. 5 cube ft. of water enter the wheel per second, of which the partially filled buckets contain one-half.

Determine the total mechanical effect.

3. The tangential velocity of a *Breast* wheel is u ft. per second, and Q cub. ft. of water enter the wheel in a horizontal direction. Determine the "*loss of work*" due to the change in the velocity of the entering water.

If the direction of the entering water make an angle of 150° with the direction of motion of the wheel at the point of entrance, shew that the "*loss of work*" is $\frac{w.Q.}{g}\frac{u^2}{6}$.

4. Classiy the different kinds of *turbines*.

Explain the character and object of the modification introduced by Jouval.

5. An *outward flow* turbine, whose external and internal diameters are 8 ft. and 5½ ft. respectively, makes 26 revolutions per min. under a *total* head of 6 ft. The water enters the wheel in a direction making an angle of 36° ( ) with the direction of motion of the point of entrance; determine the angles of the *moving vane* at ingress and egress.

Hence shew how to delineate the vane.

6. Shew that the theoretic efficiency of the above turbine depends *solely* upon the angles of the moving vane, and find its value.

BACHELOR OF APPLIED SCIENCE AND THIRD YEAR.

APPLIED MECHANICS. [*Paper III.*]

TUESDAY, APRIL 19TH:—MORNING, 9 A.M.

Examiner,.....HENRY T. BOVEY, M.A., C.E.

(*N.B. All forces are assumed to be parallel to one plane.*)

1. Verify the following:—

"*At a point within a solid in a compound state of strain, the tangential, components of the tresses upon any two planes at right angles to each other, and passing through the point, are equal in intensity.*

The *total* stress at a point O upon a plane $A\ B$ is 60 lbs. per sq. in. and its obliquity is 30°; the *normal* component of the stress at the point O upon a plane $C\ D$ perpendicular to $A\ B$ is 40 lbs. per sq. in.; determine the *total* stress upon $C\ D$, and also its *obliquity*.

2. Shew that at any point within a solid in a *compound* state of strain,

there are two planes at *right angles* to each other upon which the stresses are *wholly normal*.

Find the principal stresses and principal planes in the *Rider* of Question (1).

3. $O\ S$ and $O\ T$ are the principal axes at a point O within a strained mass; $O\ R$ is the resultant stress upon any plane $A\ B$ through O; shew that the *locus* of R is an ellipse.

$O\ N$ is drawn perpendicular to $A\ B$, and equal to $\frac{1}{2}(p_1 + p_2)$, where p_1 and p_2 are the principal stresses; $N\ R$ is joined and produced to cut the axes in S and T; shew that N is the middle point of $S\ T$, and that the angle $O\ N\ R$ is *twice* the angle $S\ O\ A$.

4. Determine the position of the plane in the *Rider* of Question (1), upon which the tangential stress is a maximum.

Is it possible to draw a plane coinciding in direction with the total resultant stress upon it? Why?

5. What are *conjugate* stresses? Shew that the *obliquities* of two conjugate stresses are equal.

If two conjugate stresses at the point O in the *Rider* of Question (1) are equal, determine their *magnitude* and *obliquity*.

6. Enunciate the principle introduced in the investigation of the stresses in a mass of earth by the assumption that the stability of the earth is *solely* maintained by *friction*.

Express your statement analytically, and determine the *limiting* values of the *ratio* of the principal stresses at any point of the mass, so that the earth may neither *heave up* nor *spread*.

7. A mass of earth weighs (w) lbs. per cube ft., its angle of repose is (ϕ) and it depends *solely* upon *friction* for its stability. If (x) be the depth of the foundation of a structure, shew that:—

(1)—When the weight of the structure produces a uniformly distributed pressure of intensity p_o,

$$\frac{w.\,x}{p_o} \geq \left(\frac{1 - \sin\phi.}{1 + \sin\phi.}\right)^2$$

(2)—When the weight produces a pressure whose intensity varies uniformly from a minimum p_2 to a maximum p_1.

$$\frac{w\,x}{p_1} \geq \left(\frac{1 - \sin\phi}{1 + \sin\phi}\right)^2 \text{ and } \frac{w.x}{p_2} \leq 1$$

8. Determine the *limiting* values of the depth of the foundation, (1)—of a wall of rectangular section, 20 ft. high (2)—Of a wall of trapezoidal section, the front and rear faces being plumb, and 20 ft. and 4 ft. in height respectively.

The angle of repose of the earth $= 30°$, the weight of a cub. ft. of earth $= 112$ lbs., the wt. of a cub. ft. of masonry $= 140$ lbs.

9. (t) is the thickness of a masonry bed-joint, R is the total pressure

upon the bed, (f) is the safe max. unit stress in lbs. per sq. in., and ($q.t$) is the distance from the centre of the joint to the "*centre of pressure*," shew that if $q < \frac{1}{6}$,

$$f = \frac{R}{t} \cdot (1 + 6\,q)$$

A reservoir wall of rectangular section retains water on one side level with the top, is 16 ft. thick and weighs 125 lbs. per cube ft. Determine its height so that the stress upon the bed may not exceed 12240 lbs. per sq. ft.

10. A wall with a plumb rear face is to be 30 ft. high, 4 ft. wide at the top, and to retain earth sloping up from the inner edge at the angle of repose (30°); determine the width of the base, and sketch the *curve of resistance*.

Sketch the "*curve of resistance*" when water rises to top of wall on outer face.

(Wt. of masonry per cub. ft. = 144 lbs., of earth = 100 lbs.)

11. The intrados of an arch is to be a compound curve, what geometrical conditions must it fulfil?

Shew how to *strike* a 5-*centred* intrados.

12. Shew that a *linear* arch under a uniform vertical load is in the form of a parabola.

BACHELOR OF APPLIED SCIENCE.

APPLIED MECHANICS. [*Paper IV.*]

FRIDAY, APRIL 22ND:—MORNING, 9 A.M.

Examiner,.....HENRY T. BOVEY, M.A., C.E.

1. The accompanying sketch represents a *full-size* section of the steel rails for the Hamilton and North Western Ry.; find the *effective area*, the *effective depth*, and the *weight* of a rail. The steel is to have a max. tensile strength of 40 tons per sq. in. with an elastic limit of 50 per cent., and the minimum tensile strength is to be 32 tons per sq. in.; determine the max. and min. transverse strength of the rails, and the "*permanent set*" limits, the bearings being 3 ft. 6 ins. apart.

2. A cable supports a load of (w) lbs. per ft. of horizontal length, and the elevations of its two points of supports are (h_1) and (h_2) ft. above the lowest point; find the horizontal distances (x_1) and (x_2) ft. of the lowest point from the points of support, and also an approximate value for the length (L) of the cable. ($x_1 + x_2 = A$. ft.).

A rise or fall of temperature alters the length of the cable by an amount ΔL, shew that if $h_1 = h_2 = H$, the corresponding change in the deflection is $\Delta H = \frac{8}{8} \cdot \frac{H}{A} \cdot \Delta L$.

3. Explain the object of the "*stiffening truss*," and write down the two general equations of condition, (1).—When the truss ends are *free*, (2).—When *fixed*.

What *furthur* condition is it necessary to introduce in this latter case? Why?

4. Explain what is meant by a *linear rib* or *arch*.

A circular rib of radius (r) is subjected to a uniform normal load of intensity (p), shew that the thrust along the rib at any point is $T = p.r$.

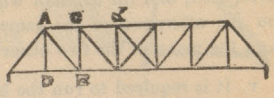
5. The *intrados* of a masonry arch of 45 ft. span is a semi-circle; the *extrados* is horizontal and 2 ft. above the crown; the masonry weighs 125 lbs. per cube ft.; determine the *total* horizontal and *vertical* pressures upon an arc of the intrados extending from the crown to a point whose radial distance makes an angle of 30° (= i) with the vertical.

Also find the *horizontal intensity* of the pressure at the point ($i = 30°$). If it should be zero, what would it indicate?

6. Enumerate the principal types of American Bridges, and point out their respective characteristics.

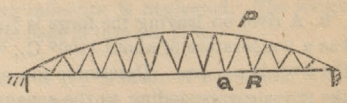
7. Describe, *in full*, a *Bollman* truss.

8. The two trusses (see Fig.) for a 16 ft. Roadway are each 17 ft. 3 in. in height and 100 ft. in the clear. The stress in $A\ B$ is 35,400 lbs., and the *live load* is 1,120 lbs. per ft. run; determine the *permanent* load, and also the *max.* stresses in the remaining members of the truss.



9. The diagonals and verticals of the truss in Question (8) are riveted to angle irons forming part of the flanges. How many rivets are required for the connection of $A\ B$ and $B\ C$ at B? Also, how many flange rivets are required to prevent the longitudinal slipping of the angle irons due to the horizontal stress induced in them at B?

10. A bowstring girder with isoceles bracing (see Fig.) is 120 ft. in the clear and 15 ft. deep at the centre. It is subjected to a *dead load* of 60 tons, and a live load of 120 tons, *uniformly ditributed*; determine the max. stresses in the diagonals $P\ Q$ and $P\ R$, and in the flanges at P and R.



Give a *working* sketch of the joint at P.

BACHELOR OF APPLIED SCIENCE.

PROBLEMS.

THURSDAY, APRIL 14TH:—MORNING, 9 A.M.

Examiners, ... { HENRY. T. BOVEY, M.A., C.E. / B. J. HARRINGTON, B.A., PH.D. / C. H. MCLEOD, MA.E.

i. Find a perspective projection of a pyramid, the base of which is a regular pentagon of 1 ft. side, and the altitude of which is 8 ft.; one edge of the base to make 30° with the picture plane. Shew also a shadow on the horizontal.

ii. In a spherical triangle a = 44° 30′, b = 79°, C = 11° 30′; determine the remaining angles and side, *graphically*.

iii. Find the orthographic projections of the *shade* and *shadow* caused by rays falling on a sphere 2 in. in dia. The rays make angles of 30° with both planes of projection.

iv. The *azimuth* and *altitude* of the sun were observed at 9 a. m, on Jan. 20th, 1881, and the *azimuth* was again observed, when at an equal altitude on the afternoon of the same day; find the angle between the meridian and the mean of the two observed azimuths.

v. It is required to run the boundary lines of a block of four townships north of the 49th parallel of latitude; determine the angles between the southern boundary and the side lines.

vi. Two arms whose lengths are 6 ft. and 5 ft. are connected by a link 4 ft. in length; find the parallel point, and shew how the motion of the point may be copied.

vii. In trigonometrical levelling between two points 4 miles distant determine the correction to be made, arising from the earth's curvature

8. A rivet on leaving the forge is $\frac{3}{4}$-in. in diameter, 3-ins. in length, and has a temperature of about 1100° C., which, however, falls to 700° C. when the rivet is *in place*. Determine the original dimensions of the rivet, and the stress corresponding to the expansion of the iron, it being given that for each 100° C. the dilatation is $\frac{1}{800}$ of the linear dimensions. Discuss the practical bearing of the question. ($E = 32{,}000{,}000$.)

9. A riveted joint fails by the crushing of the rivet *or* of the plate. If f be the *max.* and f_c the *mean* intensity of the crushing pr., in the direction of the stress, shew that $\frac{f_c}{f} = \frac{\quad}{4}$. (*It is assumed that the rivet or rivet hole retains its cylindrical form, while the crushing takes place, and also that the pr. at any point is normal to the surfaces in contact.*

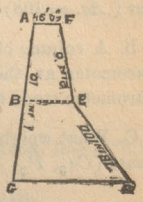
the intensity at the point being f. cos a, where a is the angle between the normal and the direction of the resultant stress.)

10. The side of a car is 48 ft. long, 6 ft. 6 ins. deep, and its platform is about 3 ft. 6 ins. above the rails; the car is carried on 8 wheels, each 2 ft. 6 ins. in diameter. Determine the *additional* weight thrown upon the leeward rail of a 4 ft. $8\frac{1}{2}$ ins. track, when the car is exposed to a side wind of 20 lbs. per sq. ft.

11. In a Poloncean roof without struts the rafter ties are equal in length and are inclined to the rafter at an angle β. If W be the *total* weight in lbs upon the roof, f the safe working inch-stress in lbs., and S the span in ft., shew that the amount of metal in the ties is,

$$\frac{5}{6} \cdot \frac{W}{f} \cdot S \text{ Cot } \beta$$

12. The Fig. is a section of a reservoir wall which has to retain water on the face AC. The masonry weighs 125 lbs. per cubic foot, and the unit stress in the material is nowhere to exceed 85 lbs. per sq. in.



First determine the safe height of the portion $ABEF$.

Secondly " " " $BCDE$.

Hence indicate the proper form of the face FED, and point out its practical advantages.

13. A pillar of diameter (D) supports a given load. If (N) pillars, each of diameter (d), be substituted for this single pillar, shew that (d) must lie between $\frac{D}{N^{\frac{1}{2}}}$ and $\frac{D}{N^{\frac{1}{4}}}$.

14. The weight carried upon the 3 ft. 6 in. wheel of a passenger car is $2\frac{1}{2}$ tons, and the frictional resistance is $2\frac{1}{2}$ lbs. per ton. Determine the rise of temperature in the tyre after the wheel has rim 100 miles supposing that the heat generated is equally divided between the rail and the wheel, and that any refrigerating influence is neglected. The weight of the tyre = 4 cwt., and the specific heat of iron = .1138.

15. A fly-wheel whose mean radius is (r) is made of a material whose specific weight is (w). The tangential velocity of the wheel is v ft. per second, and mean unit stress in a section of the run is (f) lbs. Determine the relation between w, v and f, and apply to the case of a wheel with a wrought iron rim, whose mean radius is 10 ft., and which makes 50 revolutions per minute.

16. 1 lb. of saturated vapour at a pressure of 75 lbs. expands *adiabatically* to a pressure of 15 lbs. The initial temperature was 270° F., and the curve of expansion is given by $p \cdot v^n = \text{const.}$, where $n = 1.08$; determine the portion *condensed*.

17. A 24-inch pipe, 2000 ft long gives a discharge of Q cube ft. of water. per minute. Determine the change in Q by the substitution for the foregoing of either of the following systems :—(1) Two lengths, each of 1,000 ft., whose diars. are 24-ins. and 48-ins. respectively. (2) Four lengths, each of 500 ft., whose diars. are 24-ins., 18-ins., 16-ins., and 24-ins.

Draw the "Plane of Charge" in each case.

18. The "*Head*" which will give a discharge Q at the end of a pipe of constant diar. is 3-*times* as great as that required for a *uniform service* throughout.

xix. The value of a train of wheels is (—7854). Draw a diagram of such a train giving the number of teeth on each wheel. (No wheel to have more than 90, or less than 8 teeth.)

A. How much common salt must be added to a solution containing 25 grammes of argentic nitrate in order to precipitate the whole of the silver ($Ag. = 108$) ? How much argentic chloride will be thus obtained ?

B. A volume of oxygen gas was found to be 300 cc. ; the height of the barometer at the time was 730 mm. What was the volume when the barometer stood at 760 mm. ?

C. What weight of phosphorus is contained in 100 kilos. of calcic phosphate ($Ca_3 . P_2 . O_8$) ?

METEOROLOGY.

TUESDAY, APRIL 26TH :—MORNING, 10 TO 12.

Examiner,.....C. H. MCLEOD, MA.E.

1. How would you determine the mean temperature of a day, (*a*) from the maximum and minimum temperatures, (*b*) from observations at two hours of the same name, (*c*) from observations at 7 a.m., 2 and 9 p.m.

2. In observing a mercurial barometer what precautions would you adopt, (*a*) to obtain the true temperature of the mercury, (*b*) to neutralize capillary action.

3. Describe, (*a*) the aneroid barometer, (*b*) an electrical anemograph, (*c*) a maximum thermometer.

4. What do you understand by a relative-humidity of 70 ?

If the temperature of the air were 55°, what would the wet-bulb thermometer read at this degree of humidity ?

5. How is hoar-frost formed ? How do you explain the fact that vegetation may be injured by frost when the temperature of the air is several degrees above freezing ?

6. How would you classify clouds? (*a*) How are cumulus clouds usually formed?

7. How would you classify lightning? (*a*) What is the cause of thunder?

8. What are coronæ? (*a*) How are they formed? (*b*) How do they differ from halos?

MINING COURSE.

THIRD YEAR.

CHEMISTRY AND ASSAYING.

SATURDAY, APRIL 16TH:—MORNING, 9 TO 11.

Examiner,.....B. J. HARRINGTON, B.A., Ph.D.

1. Describe the qualitative analysis of an insoluble Silicate.

2. Hydric Sulphide is passed through a solution of a reddish-yellow colour. Sulphur separates and the solution becomes green. What inference would you draw?

3. Describe the course to be followed in the qualitative analysis of an Alloy.

4. A solution contains Antimony, Copper, Iron and Manganese. How would you recognize the presence of these metals?

5. Name the metals of the Fifth Group, and describe their separation.

6. How would you ascertain the quantity of Iron in a specimen of Magnetite.

7. A specimen of Iron Pyrites contains both Gold and Silver. How may the proportions of these metals be determined?

8. How would you determine the quantity of Silver in an Argentiferous Galena.

Practical examination in the Laboratory, afternoon, 2 to 6.

THIRD YEAR.

ASSAYING.

SATURDAY, APRIL 16TH :—MORNING, 9 TO 11.

Examiner,..... .....B. J. HARRINGTON, B.A., PH.D.

1. Explain the chemical changes that take place in the determination of Iron by Penny's Bichromate process.

2. How would you determine the quantity of Silver in an Argentiferous Tetrahedrite ?

3. Describe the determination of Copper with Ammonium Sulphocyanate.

4. How would you determine the amount of Manganese in an Iron Ore ?

5. Describe the assay of Lead ores in the dry way.

6. Point out any source of error in the valuation of Manganese ores by the method of Fresenius and Will.

7. 1.5 grammes of Iron wire were dissolved in dilute sulphuric acid, and 1.3 grammes of Manganese ore added to the solution. When the ore had dissolved, the Ferrous Sulphate remaining was determined with Permanganate solution (1 cc. Permanganate =0.01085 Fe), of which 21.3 cc. were required. How much MnO_2 was present in the ore?

8. How would you make a proximate analysis of a sample of Lignite ?

9. State fully how you would ascertain the value of the ores exhibited.

Assaying in the Laboratory in the afternoon, from 2 to 6.

THIRD YEAR.

MINING.

SATURDAY, APRIL 23RD :—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., PH.D.

1. What variations in thickness and character are often observable in bedded deposits ? What are the causes of these variations ?

2. What questions have to be taken into consideration in laying out and working a quarry for building stone or slate ?

3. In working a coal-seam on the long-wall system, how do the cleat and inclination of the seam influence the direction to be given to the galleries and stalls ?

4. Distinguish between the terms drift, gallery and crossent. What are the form and dimensions of an ordinary drift, and how are the walls usually supported?

5. What circumstances would influence you in determining whether a steam-engine for hoisting should be direct-acting or supplied with gearing?

6. Point out the principal characteristics of the engines employed for hoisting on the Comstock Lode.

7. Describe any form of diamond-drill for prospecting, and explain its action.

8. Under what circumstances is tubbing employed in shafts? What materials are used for the purpose, and what are the respective advantages of these materials?

9. Describe any method for extracting (*a*) retaining tubes, and (*b*) broken rods from bore-holes.

10 Where ladders are used in mines how should they be constructed, and how placed in the shaft?

11. Describe the driving and timbering of a gallery in running ground.

12. Explain the following terms: Winze, adit, skip, goaf, putter, miner's inch.

THIRD YEAR.

MINERALOGY.

MONDAY, APRIL 25TH:—MORNING, 9 TO 12.

Examiners,..... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., PH.D.

1. What do you understand (*a*) by a twinning-plane, (*b*) a composition-face, and (*c*) an axis of revolution. Mention any case in which the twinning-plane and composition-face do not coincide.

2. What forms are produced (*a*) by truncating and (*b*) by bevelling the edges of a cube, (*c*) by truncating the edges of the regular octahedron, (*d*) by truncating and (*e*) by bevelling the edges of a rhombic dodecahedron?

3. Describe the crystal whose planes are represented by the following symbols:

$$\infty P. \quad \infty \breve{P}2. \quad \infty \breve{P} \infty. \quad OP. \quad P. \quad 2\breve{P}\infty. \quad 2\breve{P}\infty.$$

Give the corresponding symbols according to Dana.

4. Explain each of the following symbols:

$$3O\tfrac{3}{2}, \quad \frac{m\,Om}{2}, \quad \frac{m\,O\,\infty}{2}, \quad mR_n, \quad \infty \breve{P} \infty, \quad \bar{m}P'n, \quad m, \breve{P}n, \quad \infty \bar{P}n.$$

5. Distinguish between cleavage and fracture, and show the importance of these characters in determining minerals.

6. Give the general characters of the Feldspar group. Name the members of the group, and classify them according to composition and crystalline form.

7. What is the composition of Prase, Moonstone, Asbestus, French chalk, and Satin-spar?

8. Give the blowpipe characters of Stibnite, Sphalerite, Galenite, Magnetite, Gypsum and Barite.

9. Explain the use of the following substances in the determination of minerals: Cobalt Nitrate, Fluor-spar, Cupric Oxide, Potassium Bisulphate Potassium Cyano-nitride.

10. Name the minerals exhibited, giving in each case the ground of your determination.

Determination of minerals in the Laboratory, afternoon, 2 to 5.

Faculty of Medicine.

MATRICULATION EXAMINATION, 1880.

LATIN.

Examiner,..... .....H. Aspinwall Howe, M.A., LL.D.

1. Translate:—

(*a*) Quo prœlio sublati Helvetii, quod quingentis equitibus tantam multitudinem equitum propulerant, audacius subsistere, nonnunquam et novissimo agmine prœlio nostros lacessere cœperunt. Cæsar suos a prœlio continebat, ac satis habebat in præsentia hostem rapinis, pabulationibus populationibusque prohibere. Ita dies circiter quindecim iter fecerunt, uti inter novissimum hostium agmen et nostrum primum non amplius quinis aut senis millibus passuum interesset.

(*b*) Quamobrem placuit ei, ut ad Ariovistum legatos mitteret, qui ab eo postularent, uti aliquem locum medium utriusque colloquio diceret: velle sese de republica et summis utriusque rebus cum eo agere. Ei legationi Ariovistus respondit: Si quid ipsi a Cæsare opus esset, sese ad eum venturum fuisse; si quid ille se velit, illum ad se venire oportere. Præterea se neque sine exercitu in eas partes Galliæ venire audere, quas Cæsar possideret, neque exercitum sine magno commeatu atque molimento in unum locum contrahere posse. Sibi autem mirum videri, quid in sua Gallia quam bello vicisset, aut Cæsari aut omnino populo Romano negotii esset.

2. Parse *audacius*, *iter*, *mitteret*, *ei*, *utriusque*, declining the variable words.

3. Give the principal parts of the verbs *sublati*, *propulerant*, *lacessere*, *audere*, *contrahere*. When do verbs drop the reduplication of the Perfect Tense?

4. (*a*) *Dies quindecim*. What case, and why?

(*b*) *Non amplius.* Give the rule for the use of the Comparative without *quam*, and also with it.

(*c*) *Quinis aut senis.* To what class of numerals do these belong? Why not *quinque aut sex?*

(*d*) *Si quid opus.....oportere.* State distinctly to what persons the Pronouns in this sentence separately refer, and give the Rule for the use of the Pronoun *sui, sibi, se.*

(*e*) *Si quid opus esset.* Explain the construction of *opus.* By what case is *opus* usually followed?

(*f*) *Vicisset.* Why is this verb in the Subjunctive Mood?

(*g*) *Venturum fuisse.* Why not *venturum esse?*

(*h*) *Negotii esset.* Why is *negotii* in the genitive? Give the Rule.

N. B.—Instead of the preceding paper from Cæsar, *candidates may take the following from* Virgil.

1. Translate :—

(*a*) " Parce metu, Cytherea ; manent immota tuorum
Fata tibi ; cernes urbem et promissa Lavini
Mœnia, sublimemque feres ad sidera cœli
Magnanimum Ænean ; neque me sententia vertit.
Hic—tibi fabor enim, quando hæc te cura remordet.
Longius et volvens fatorum arcana movebo—
Bellum ingens geret Italia, populosque feroces
Contundet ; moresque viris et mœnia ponet,
Tertia dum Latio regnantem viderit æstas,
Ternaque transierint Rutulis hiberna subactis.

(*b*) Si genus humanum et mortalia temnitis arma,
At sperate deos memores fandi atque nefandi.
Rex erat Æneas nobis, quo justior alter
Nec pietate fuit nec bello major et armis :
Quem si fata virum servant, si vescitur aura
Ætheria, neque adhuc crudelibus occubat umbris,
Non metus, officio ne te certasse priorem
Pœniteat. Sunt et Siculis regionibus urbes,
Arvaque, Trojanoque a sanguine clarus Acestes.
Quassatam ventis liceat subducere classem,
Et silvis aptare trabes et stringere remos ;

2. Parse *parce, mœnia, longius, memores, nobis,* declining the variable words.

3. Give the principal parts of the verbs *parce, cernes, remordet, subactis stringere.* When do verbs drop the reduplication of the Perfect Tense?

4. (*a*) *Parce metu.* What case is *metu*, and why?

(*b*) *Cytherea.* Who is meant? Why so called?

(*c*) *Sublimem.....magnanimum.* Distinguish between the use of these two adjectives.

(*d*) *Ponet...viderit.* What tenses are these? Why is the latter different from the former?

(*e*) *Ternaque.* To what class of numeral does *terna* belong? Give the Rule for using *terna* instead of *tria* in prose.

(*f*) *Fandi.* Why is this genitive? Give the Rule?

(*g*) *Quojustior.* Give the Rule for the use of the Comparative with *quam*, and also without it?

(*h*) *Pœniteat.* What is the usual construction of this verb, and what other verbs have the same construction?

ENGLISH.

Examiner,.....H. Aspinwall Howe, M.A., LL.D

1. Analyse the following passage, distinguishing between the *principal* and *subordinate* Propositions, and stating fully the *logical* subject and Predicate of each:—

> 'Tis now the very witching time of night,
> When churchyards yawn and hell itself breathes out
> Contagion to this world: now could I drink hot blood
> And do such bitter business as the day
> Would quake to look on.

2. Is the preceding a Simple, Compound or Complex Sentence? Give the reason for your answer.

3. What is meant by an Adverbial Sentence and an Adjective Sentence. Point out an example of each of these in the above extract.

4. Distinguish between:—*laid* and *lain*, *born* and *borne*, *straight* and *trait*, *taught* and *taut*, *ought* and *aught*, *ere* and *e'er*. Give the Comparative and Superlative of:—

good	agile	quickly
easy	feeble	badly
full	hot	blest

5. Correct the errors in the following, giving reasons for correction :—

(1) He throwed it into the river, for I seen him do it.

(2) Them that study grammar talk no better than we.

(3) It was Joseph, him whom Pharaoh promoted.

(4) I can't find out neither where the lesson begins nor where it ends.

(5) I consulted Webster, Worcester and Walker's dictionary.

6. Write a short composition—about twenty lines—on "The necessity of a literary training as preliminary to the study of the Medical Profession.

ARITHMETIC.

1. Subtract $\frac{1}{2}$ of $\frac{2\frac{1}{2}}{3}$ from $\frac{2}{3}$ of $\frac{3}{3\frac{1}{2}}$ and multiply the result by $\frac{3}{4}$ of 8.

2. Multiply 15.4546 by .019, and divide the product by 1.33.

3. Find the value of 3.38375 of an acre.

4. If 50 quarters of wheat are sold for $8.40 per quarter, and 100 quarters are sold for $8.80 per quarter, what is the average price per *bushel?*

5. Find the interest on $750 from March 16th to January 23rd, 1881, at 6 per cent.

ALGEBRA.

1. If $x = 1$, $y = -2$, $z = 3$; find the value of

$$\tfrac{1}{2}\left[x - \tfrac{1}{3}\left\{y - \tfrac{1}{4}(z - x - 2y)\right\}\right]$$

2. Multiply $x^2 + 5x - 3$ by $x^2 - 5x - 3$ and divide $6a^2b^2 - ab^3 - 12b^4$ by $3ab + 4b$.

3. Reduce $\dfrac{a-b}{a^2+ab} \times \dfrac{a-b^2}{a^2-ab}$ to a simple fractions.

4. Solve the equations,

$$(1)\quad \frac{x-2}{3} - \frac{1-\frac{1}{2}x}{6} = 8\tfrac{1}{4} - \frac{27(x-2)}{5}$$

$$(2)\quad \left\{\begin{array}{l} \frac{1}{2}x - 12 = \frac{1}{4}y + 8 \\ \frac{1}{6}(x+y) + \frac{1}{3}x = \frac{1}{4}(2y - x) + 35 \end{array}\right\}$$

5. A person bought cloth for £12. If he had bought one yard less for the same money, each yard would have cost him one shilling more than it did. How many yards did he buy?

GEOMETRY.

A.

1. Draw a straight line perpendicular to a given straight line from a given point without it.

2. Straight lines that are parallel to the same straight line are parallel to each other.

3. To a given straight line apply a parallelogram equal to a given triangle and having an angle equal to a given angle.

4. If a straight line be bisected and produced to any point, the rectangle under the whole line thus produced and the part produced, together with the square on half the bisected line, is equal to the square on the line made up of the half and the part produced.

5. Divide a given straight line into two parts, so that the rectangle under the whole and one part shall be equal to the square on the other part.

B.

1. Describe a square that shall be equal to a given rectilineal figure.

2. If a straight line touch a circle, and from the point of contact a straight line be drawn, cutting the circle, the angles which this line makes with the line touching the circle shall be equal to the angles which are in the alternate segments of the circle.

3. Find the G. C. M. of $2x^3 + 10x^2 + 14x + 6$ and $x^3 + x^2 + 7x + 39$.

4. Divide the numbers 80 and 90 each into two parts, so the sum of one out of each pair may be 100, and the difference of the others 30.

5. If tan A $=$ 2.3, find sin A, cos A, cosec A, and versin A.

6. A person observes the elevation of a tower to be 60°, and on receding from it 100 yards further he finds the elevation to be 30°; required the height of the tower.

N.B.—All numerical results to be carried out to the third decimal place.

FIRST YEAR.

BOTANY.

SATURDAY, MARCH 19:—9 A.M.

Examiner,.....J. W. DAWSON, LL.D., F.R.S., &c.

1. Describe Root-fibrils, and state the distinction between a Root and a Rhizoma.

2. Describe the Fibro-vascular tissues in an Exogenous Stem.

3. Describe the structures in the Blade of the Leaf, and state generally their functions.

4. Explain how Carbon Dioxide and Ammonia contribute to the nutrition of the plant.

5. State the distinction between Definite and Indefinite Inflorescence, and name and describe some of the forms of each.

6. Explain the structure and functions of the Stamens and Pistils.

7. What is meant by Coalescence, Suppression, Irregularity, of the parts of the flower? Give examples.

8. Explain the terms Coma, Pappus, Sporangium, Achenium, Drupe, Funiculus.

9. Describe the parts seen in an Exalbuminous Dicotyledonous Seed, and how they correspond with those of the ovule.

10. State the principal differences between the fertilization of a Fern or Moss, and that of a Phænogam.

11. Define the classes of the Vegetable Kingdom, and give an example of each.

12. Refer the plants exhibited to their Series and Classes.

FIRST YEAR.

PHYSIOLOGY.

Examiner,.....PROF. OSLER.

1. The minute anatomy of bone.

2. The structure of muscle fibre.

3. The varieties of red-blood corpuscles in the animal series.

4. The sounds of the heart.

5. The action of the arteries in the circulation.

6. The mechanism of an inspiratory act.

FIRST YEAR.

ANATOMY.

Examiner,.....PROFESSOR W. E. SCOTT, M.D.

1. What are the bones of the Cranium?

2. How are articulations divided?

3. Name the muscles of the anterior Brachial region.

4. What arteries are given off from the Abdominal Aorta?

5. What passes through the Sphenoidal Fissure?

6. Name the first two layers of the Muscles of the back.

FIRST YEAR.

CHEMISTRY.

Examiner,.....G. P. GIRDWOOD, M.D.

1. Describe the molecular forces, giving an illustration of each.

2. What are the laws of chemical combination?

3. What is meant by an atomic weight, and the difference between it and an equivalent weight?

4. Write out in symbols, Hydrochloric Acid, Sulphuretted Hydrogen, Sulphuric Acid, Arsenic Anhydride, Caustic Potash, Hydrated Oxide of Aluminum.

5. What is the law of Dulong and Petit?

6. How many classes of oxides are there, and what are their different properties?

PRIMARY EXAMINATION.

INSTITUTES OF MEDICINE.

Examiner,.....PROFESSOR OSLER.

1. Describe the varieties of Epithelium, stating the localities where each is found.

2. The coagulation of the blood (briefly); under what conditions may coagulation take place in the living body?

3. The structure and functions of arteries.

4. Describe the various digestive ferments and their actions.

5. The functions of the facial nerve. Explain fully the phenomena accompanying paralysis of it.

6. Describe briefly the formation of the "fœtal membranes"—amnion allantois and chorion.

7. Emboli (1) varieties, (2) mode of formation, (3) destination, (4) effects.

8. Describe briefly the chief degenerations.

PRIMARY EXAMINATION.

ANATOMY.

Examiner,.....PROFESSOR W. E. SCOTT, M.D.

1. Describe the situation and what passes through the following foramina, viz.: Condyloid, Cotyloid, Infraorbital, Munro, Obturator, Ovale of Heart, Ovale of Sphenoid Bone, Sommering, Vesalii and Winslow.

2. What are the boundaries of the Tympanum?

3. What are the relations and branches of the deep femoral Artery?

4. What are the boundaries of the Axilla, and relations of the Axillary Artery?

5. Give the openings leading from the Spheno-Maxillary fossa, and what passes through them.

6. Give the origins, insertions, relations and actions, of the following Muscles: Internal Rectus of Orbital Region, External Abdominal oblique, Quadratus Lumborum, Serratus Posticus Inferior and Tibialis Anticus.

THEORY AND PRACTICE OF MEDICINE.

Examiner,.....PROFESSOR R. P. HOWARD, M.D.

1. Enumerate the Fevers attended with cutaneous eruptions—describe the latter, and the date of their appearance.

2. What are the early symptoms and the causes of Rickets.

3. Give the features of continued and relapsing acute Rheumatism, and the relations of these forms to Endocarditis and to treatment.

4. The character of the urine in acute Parenchymatous Nephritis—the treatment of the disease, with the doses?

5. Enumerate the physical signs of "large-lunged" Emphyzema, and the consequences of the affection.

6. Describe the morbid anatomy of Diphtheritic inflammation of the mucous membrane.

7. State the causes of Chorea, and of its cardiac murmurs.

8. *The* remedies and their doses for Chorea and Epilepsy?

9. What are the symptoms of Ulcerative Endocarditis, and what the most important point in the treatment of acute inflammation of the valves?

10. State the considerations that should guide us in recommending change of climate in consumption.

PASS. EXAMINATION IN CHEMISTRY.

Examiner,.....G. P. GIRDWOOD, M.D.

1. When a ray of light falls on a polished surface of a transparent medium, what becomes of it?

2. What is meant by the terms, latent heat, specific heat, atomic heat and sensible heat?

3. Describe the mode of occurrence in nature of oxygen and nitrogen their mode of preparation, and their physical properties.

4. How is Chlorine prepared? what are its properties? Describe the manufacture of H Cl. What are its common impurities, and the tests for their presence?

5. Describe the mode of separating mercury from its ores. How many classes of salts does it form, and what are the tests for the different classes?

6. What is meant by a saturated hydro carbon? write out the formula for one. What is the difference between an homologous series and an isologous series of hydro carbons?

Faculty of Law.

MATRICULATION EXAMINATION, 1880.

Examiners,..... { Mr. Archibald. / Mr. Lareau.

1. Translate into English or French the following extracts :—

(*a*) Lucus in urbe fuit media, lætissimus umbræ
Quo primum jactati undis et turbine Pœni
Effodere loco signum, quod regia Juna
Monstrarat, caput acris equi ; sic nam fore bello
Egregiam et facilem victu per sæcula gentem.
Hic templum Junoni ingens Sidonia Dido
Condebat, donis opulentum et numine divæ,
Aerea cui gradibus surgebant limina nexæque
Aere trabes, foribus cardo stridebat aenis.

Virg. Æn. I, 441-449.

(*b*) Prima luce, quum summus mons a T. Labieno teneretur, ipse ab hostium castri non longius mille et quingentis passibus abesset, neque ut postea ex captivis comperit, aut ipsius adventus, aut Labieni cognitus esset. Considius equo admisso ad eum adcurrit ; dicit montem quem a Labieno occupari voluerit ab hostibus teneri ; id se a Gallicis armis atque insignibus cognovisse.

Cæsar, Bell. Gall. I., 22.

(*c*) Utinam, Quirites, virorum fortium atque innocentium copiam tantam haberetis, ut hæc vobis deliberatio difficilis esset, quemnam potissimum tantis rebus ac tanto bello præficiendum putaretis ! Nunc vero quum sit unus Cn. Pompeius, qui non modo eorum hominum, qui nunc sunt, sed etiam antiquitatis menoriam virtute superarit : quæ res est quæ cujusquam animum in hac causa dubium facere possit ?

Cic. Pro Leg. Manil. c. 10.

2. Translate into English :—

LE MAITRE D'ARMES.—Je vous l'ai déjà dit, tout le secret des armes ne consiste qu'en deux choses, à donner et à ne point recevoir ; et, comme je vous fis voir l'autre jour par raison démonstrative, il est impossible que vous receviez si vous savez détourner l'épée de votre ennemi de la ligne de votre corps, ce qui ne dépend seulement que d'un petit mouvement du poignet ; ou en dedans, ou en dehors.

M. JOURDAIN.—De cette façon donc un homm, sans cœur, est sûr de tuer son homme, et de n'être point tué ?

MOLIÈRE, *Le Bourg. Gent.* II., 3.

3. Give the future indicative, imperfect subjunctive, and past participle of *recevoir*, *naître*, *dire*, *aller*. The plural of *animal*, *bal*, *clou*, *genou*, *œil*.

4. Translate into French :—

The Prince wrote to his idol in the style of a worshipper ; and Voltaire replied with exquisite grace and address. A correspondence followed, which may be studied with advantage by those who wish to become proficients in the ignoble art of flattery. No man ever paid compliments better than Voltaire. His sweetest confectionery had always a delicate, yet stimulating flavour, which was delightful to palates wearied by the coarse preparations of inferior artists. It was only from his hand that so much sugar could be swallowed without making the swallower sick.

MACAULAY, *Essay on Frederick the Great.*

5. Give the general rule for the formation of the plural of English nouns and the principal exceptions thereto. Compare the adjectives *bad*, *lovely*, *proper*, and the adverbs *much* and *well*.

---

6. (*a*) *A* can do a piece of work in 12 days, and *A* and *B* together can do it in 5 days ; in what time can *B* alone do it ?

(*b*) What sum will amount to $605 in $2\frac{1}{2}$ years at 4 per cent. simple interest ?

7 (*a*) Reduce to lowest terms the following :

$$x - \cfrac{x-y}{1+\cfrac{x(x-y)}{1+xy-}}$$

(*b*) Solve the equation

$$\frac{2x}{7} + \frac{x-1}{6} = x - 4$$

8. Show that any two sides of a triangle are together greater than the third side.

---

9. Relate the principal events which took place in Canada during the administration of Governor de Frontenac.

10. Give a definition of Logic. What is a Syllogism?

11. Name the principal English writers who flourished during the reign of Queen Anne; and mention their best known works.

12. Name the principal philosophers of the German school.

13. What French general was in command at the battle of Jemmapes? When was this battle fought, and between whom?

14. Give the date of the Cession of Canada to Great Britain.

FIRST YEAR.

CRIMINAL LAW.

Examiner,.....PROFESSOR ARCHIBALD.

1. What persons are incapable of committing a crime?

2. The prisoner was indicted for murder, and insanity was pleaded. The proof consisted of a number of circumstances showing strange and unusual conduct on the part of the prisoner: What tests of insanity should the judge direct the jury to apply to this proof to justify an acquittal?

3. A wife went from house to house uttering base coin. Her husband accompanied her, but remained outside. Both were indicted. Should both be convicted? and give you reasons.

4. Define larceny. embezzlement, obtaining by false pretences, burglary, riot, conspiracy, libel.

5. Where the prisoner stopped the prosecutor who was carrying a bed on his shoulders, and told him to lay it down or he would shoot him, and he laid it down on the ground, but before the prisoner could take it up he was apprehended: Had the offence of larceny been completed? and give reasons.

6. Define murder, manslaughter. If two persons fight, and after an interchange of blows on equal terms, one, suddenly and without any such intention at the commencement of the fight, snatched up a deadly weapon and kills the other party with it: Is this murder or manslaughter? and give reasons.

PREMIERE ANNEE.

DROIT CRIMINEL.

Examinateur,.....PROF. ARCHIBALD.

1. Quelles personnes sont incapables de commettre un crime?

2. Le prisonnier est accusé de meurtre, et plaide aliénation mentale. La preuve consiste en plusieurs circonstances démontrant une conduite étrange et insolite de la part de l'accusé. Quels sont les critères d'aliénation mentale que le juge doit ordonner au jury d'appliquer à cette preuve afin de justifier l'absolution du prisonnier.

3. Une femme mariée va de maison en maison émettant de fausse monnaie. Son mari l'accompagne mais reste dehors. Ils sont tous deux accusés. Doivent-ils être condamnés tous les deux? Donnez vos raisons.

4. Définissez le larcin, le larcin par serviteur (*embezzlement*), les faux prétextes, le vol avec effraction (*burglary*), l'emeute, la conjuration, le libelle.

5o. Le prisonnier avait retenu le poursuivant qui portait un lit sur ses épaules, lui disant de le déposer, sans quoi il ferait feu sur lui. Le poursuivant posa le lit à terre, mais le prisonnier fut arrêté avant de pouvoir le prendre. A-t-il commis un larcin? Donnez vos raisons.

6o. Définissez le meurtre, l'homicide non-prémédité (*manslaughter*). Deux personnes se battent et échange des coups de part et d'autre. Soudainement et sans en avoir eu l'intention au commencement de la bataille, l'un des combattants saisit une arme meurtrière et tue son adversaire. A-t-il commis un meurtre ou un homicide non-prémédité?

Donnez vos raisons.

SECOND AND THIRD YEAR.

CRIMINAL PROCEDURE.

Examiner, ...PROFESSOR ARCHIBALD.

1. Define Criminal Procedure, and divide it into its several stages.

2. State the principal cases in which an arrest may be made without a warrant by a constable.

3. A police magistrate having received an information under oath, accusing an individual of larceny, issued a warrant, and after arrest immediately committed the prisoner for trial to the Queen's Bench: Was the course of the magistrate legal? If not, what course should he have followed?

4. What are the duties and powers of a police magistrate respecting bailing prisoners?

5. How is the *jury list*, grand and petit, formed?

6. How is the panel of jurors for any term of court summoned, and what are the incidents connected with it?

7. The prisoner, who was clerk to the prosecutor, was indicted for embezzling certain moneys belonging to his master. The evidence showed that the prisoner had received, at different times, several sums of money from the prosecutor, a dealer in skins, for the purpose of purchasing skins. The prisoner obtained the skins on credit, and applied the money to his own use, but debited the prosecutor in his day-book with several sums of money as having been paid for the skins: Was the offence larceny or embezzlement? and give reasons.

8. A person informs a constable, that an individual whom he points out has stolen his watch; at the same time he points out another individual whom he declares to have obtained his ring by false pretences. Thereupon the constable arrests both without a warrant: Was the arrest legal in both cases or in either? and give reasons.

9. Several soldiers employed by the messenger of the Secretary of State to assist in the apprehension of a person *unlawfully* broke open the door of a house where the person was supposed to be. Having done so some of the soldiers began to plunder, and stole some goods: Were all the soldiers guilty of this larceny? and give reasons.

(The first six questions only to be answered by students not competing for the medal; the whole paper for medical students.)

DEUXIEME ET TROISIEME ANNEES.

PROCEDURE CRIMINELLE.

Examiner,..... PROF. ARCHIBALD.

1. Définissez la Procédure Criminelle, et indiquez les différentes périodes de cette procédure.

2. Faites connaître les principaux cas dans lesquels un constable peut appréhender sans un mandat (*warrant*) ?

3. Un magistrat de police reçoit une dénonciation (*information*) sous serment, accusant un individu de larcin, ordonne l'émanation d'un mandat (*warrant*), et immédiatement après l'appréhension de l'inculpé le fait emprisonner en attendant son procès devant la Cour du Banc de la Reine. A-t-il procédé légalement ? Si non, quelle procédure aurait-il dû adopter ?

4. Faites connaître les devoirs et les pouvoirs d'un magistrat de police à l'égard du cautionnement des prisonniers.

5. Expliquez la formation de la liste du jury (grand et petit).

6. Comment se fait l'assignation du tableau des jurés pour un terme de la Cour ? Donnez les incidents d'une telle assignation.

7. Le prisonnier, commis du poursuivant, fut accusé d'avoir soustrait (*embezzled*) certaines sommes appartenant à son maître. La preuve établit que le prisonnier avait reçu à différentes époques plusieurs sommes d'argent du poursuivant, marchand de peaux, pour acheter des peaux. Le prisonnier se fit donner les peaux à crédit et employa l'argent à son propre usage, mais dans son livre-journal fit paraître le poursuivant comme débiteur de plusieurs sommes soi-disant payées pour les peaux. Le prisonnier est-il coupable de larcin ou d'*embezzlement?* Donnez vos raisons.

8. Une personne dénonce un individu à un constable comme ayant volé sa montre. En même temps il indique un second individu qu'il accuse d'avoir obtenu sa bague sous faux prétextes. Là-dessus le constable les appréhende tous deux sans mandat. L'arrestation est-elle légale dans les deux cas, ou dans l'un seulement ? Donnez une réponse motivée.

9. Plusieurs soldats employés par l'émissaire du secrétaire d'Etat pour aider dans l'appréhension d'une personne, forcèrent *illégalement* la porte d'une maison dans laquelle on croyait trouver l'accusé. Là-dessus les soldats commencèrent a piller, et volèrent quelques effets. Sont-ils tous coupables de larcin ? Donnez vos raisons.

(Les étudiants qui ne concourrent pas pour la médaille répondront aux six premières questions seulement : ceux qui concourrent répondront à toutes les questions.)

INTERNATIONAL LAW AND INSURANCE.

Professor,.....W. W. H. KERR, Q.C., D.C.L.

1. In order to float a ship after stranding, some of the goods laden on board of her are put into two lighters to be carried on shore; it becomes necessary, to save one of the lighters from foundering, to jettison some of the goods on board of her: the ship and cargo are totally lost, the lighters reach shore, and land the goods (with the exception of those jettisoned) safely. What recourse have the owners of the jettisoned goods, if any?

2. A person insured his life for $10,000, payable to his heirs and assigns, and a Policy was issued in his favor; he afterwards transferred the Policy to one of his creditors, to whom he owed $10,000, with the consent of the Company, the premiums were regularly paid, and he committed suicide during the continuance in force of the Policy, under the delusion that he had received a command from God to kill himself. Can his assignee maintain an action to recover the amount insured against the Company? Give your reasons, pro or con.

3. During the war between the United and Confederate States, a British vessel sailed from Liverpool in England for Matamoras, on the Rio Grande,—that river being the boundary between Texas, one of the Confederate States, and Mexico—laden in great part with boots fit for soldiers' use, cavalry bridles and saddles, quinine and rifles,—a portion of this cargo belonging to the Shipowner. One hundred miles from the Coast of Ireland a United States cruiser seized her, and she was in due course, with her cargo, libelled in a United States Prize Court. Upon what grounds was the condemnation asked for, and what should have been the decree?

4. The land surrounding the Black Sea is owned by Turkey and Russia, the land on both sides of the Straits connecting that sea with the Mediterranean is owned by Turkey, and in many places is less than six miles wide—apart from Treaty regulations what are the rights of Russia (if any) to the passage of those Straits?

5. A, the proprietor of a house valued at $10,000, insures it against fire for $8,000. B, who holds a mortgage on it, insures it against fire for $6,000, amount of his mortgage. The house is burned. What are the rights of the proprietor and the mortgagee against their respective insurers?

6. The prime cost of goods insured is $2,000, and they are so valued in the Policy, being damaged by a peril of the sea, they sell for $500 in the market, where their sound price would be $1,000, how much does the Insurer pay?

7. A vessel valued in the Policy of Insurance at $20,000, and insured for that amount, but actually worth $30,000, leaves Montreal for Liverpool with a cargo of the value of $50,000, the freight on the same being $5,000.

A general average loss occurs amounting to $15,000, how will contribution in that case be divided amongst the different interests, and what amount will the shipowner be entitled to recover from the insurer of the ship?

8. During the war between Great Britain and France, in 1800, an English vessel was captured by a French man-of-war belonging to a Squadron: the officers and crew, with the ship's papers, were taken out and put on board the enemy's ship, and a prize crew put on board the captured vessel, where they remained for more than twenty-four hours. The prize crew were then removed, and the commander of the Squadron ordered the prize to be burned, which was attempted without success. She was then abandoned, and was afterwards taken possession of by an American ship and safely brought into Boston. The owners and crew of the American vessel filed their libel in one of the United States Prize Courts, the British Consul on behalf of the original owners put in a claim, and demanded restoration on payment of salvage. The French Consul, on behalf of the French Republic, filed his claim to the vessel and cargo as the property of the Captors, by the law of nations. What should have been the decree of the Court?

9. A Bill of Exchange was drawn and endorsed by the defendants in England, on French subjects resident in Paris (France), and was accepted by them in Paris. The bill on its face was payable on the 5th October, 1870: before that date the Emperor of the French, in consequence of the War with Germany, enlarged the time for the payment and protesting of current Bills of Exchange for one month; and the time was afterwards enlarged from time to time by the Government of France for the time being. By these enlargements the defendants' bill did not become payable until the 5th September, 1871. On that day the bill was presented to the acceptors, and payment refused: it was protested, and notice of dishonor was given to all parties concerned, in due time, after the 5th September, 1871.

Can an action be maintained against the defendants in England for the amount of the Bill of Exchange and costs of protest, at the suit of their indorsee, for value? State your reasons for your opinion?

(The first six questions for ordinary students, the whole to be answered by those competing for the medal and the Professors prize.)

University School Examinations

1881.

PRELIMINARY SUBJECTS.

GEOGRAPHY.

WEDNESDAY, 1ST JUNE :—AFTERNOON, 2 TO 4.

Examiner,..... { J. CLARK MURRAY, LL.D.
REV. PROF. SCARTH, M.A.
CHARLES E. MOYSE, B.A.

1. Define Latitude and Longitude.

2. (*a*) What are the two Hemispheres into which the earth is divided by one of the meridian circles ? (*b*) Which of these Hemispheres is called the Old World ; which, the New ? (*c*) Which has most water; which, most laed ?

3. (*a*) What are the two Hemispheres into which the earth is divided by the equator ? (*b*) Which has most water ; which, mosl land ?

4. Name the continents of the Old World, and describe their relative positions.

5. Name any two great rivers in each of the Old World continents, and the seas into which they flow.

6. (*a*) What is an Isthmus ? (*b*) Name one which joins two continents in the Old World, and one which joins the two main divisions of the New.

7. Name any four of the great mountain ranges of Europe, and describe their positions.

8. Describe the position of each of the following countries, and name its capital :—Spain, Brazil, Persia, Mexico, Belgium, Greece, Afghanistan.

9. Name in order, proceeding from north to south, those of the United States which lie on the Atlantic coast.

10. Name in order, proceeding from east to west, the provinces of the Dominion of Canada, with the capital of each.

11. Draw a map showing the relative positions of the five great lakes and the course of the St. Lawrence.

THE GOSPELS.

WEDNESDAY, JUNE 1ST:—AFTERNOON, 4 TO 5.

Examiners,..... { REV. J. CLARK MURRAY, LL.D.
REV. PROF. SCARTH, M.A.
CHAS. E. MOYSE, B.A.

1. State what you know of the birth and childhood of our Lord.

2. At what age did our Lord enter upon His public ministry? How long did it last? What circumstances immediately preceded it?

3. Give an account of our Lord's first miracle. Where was it wrought? When were the greater number of his miracles performed?

4. Relate the parable of the "ten virgins." What is a parable?

5. Can you give the account of our Lord's last appearance to the Disciples at the Sea of Tiberias, and His solemn questions to Peter on that occasion?

ENGLISH GRAMMAR.

THURSDAY, 2ND JUNE:—MORNING, 9 TO 12.

Examiners,..... { J. CLARK MURRAY, LL.D.
REV. PROF. SCARTH, M.A.
CHARLES E. MOYSE, B.A.

1. In adding a syllable to a word, (*a*) if the word ends in a consonant when is the consonant doubled; (*b*) if it ends in *y*, when is the *y* changed into *i*?

2. Give the comparative and the superlative of the following adjectives:—Sad, bad, fair, far, little, brittle, merry, gay, beautiful, ill, tall, late.

3. Give the present and past participles of each of the following verbs:—Seek, leak, feel, steal, lose, loose, tell, fell, hear, near, forsake, cut.

4. In the following verse point out (*a*) the nouns, proper and common, (*b*) the adjectives, and the nouns they qualify, (*c*) the prepositions, and the nouns they govern, (*d*) the conjunctions, and the parts of sentences they connect:—

"And when above the surges
They saw his crest appear,
All Rome sent forth a rapturous cry,
And even the ranks of Tuscany
Could scarce forbear to cheer."

5. In the following sentence distinguish active, passive, transitive, intransitive, and impersonal verbs:—"It rained for a little as we began to ascend: but the sun dispersed the clouds soon, and we were almost oppressed with its heat.'

6. Explain what the two primary elements of a sentence are, illustrating by an example.

7. (*a*) Distinguish Complex and Compound Sentences. (*b*) Of which sort are the sentences in questions 4 and 5?

8. In the following sentences select the words which enlarge the subject:——(*a*) Alfred the Great made many wise laws; (*b*) Impatient of delay, they rushed unprepared to battle; (*c*) Rejecting with disdain the delicacies provided for his table, the king satisfied his appetite with common fare.

9. In the following sentences distinguish Direct and Indirect Object:—(*a*) Play me that old tune; (*b*) He taught his people the truth.

10. Correct the following errors:—(*a*) Neither of us were there (*b*) Each of the members go away in their turn; (*c*) You are better entitled to the prize than her; (*d*) I seen him do it.

ARITHMETIC.

FRIDAY, JUNE 3RD:—MORNING, 9 TO 12.

Examiners,..... ..... { REV. PRINCIPAL LOBLEY, D.C.L. / G. H. CHANDLER, M.A.

1. Subtract the difference of 724809 and 347251 from their sum, and multiply the remainder by 207.

Express the result in words.

2. A tradesman receives on an average £70 15s. 8d. every day, and pays out £59 18s. 9½d. Find how much he makes in the year, deducting 53 Sundays.

3. Multiply. 072; by ·3863.

4. Find the amount of $7500 for 3 years at 6 per cent. per annum Compound Interest.

5. Find the price of carpeting a room 20 ft. 8 in. long and 18 ft. 9 in. broad with carpet 27 inches wide at 5s. 3d. per yard.

6. If a family of 8 people consumes $13 worth of flour in 6 weeks, how long will $16.25 worth last a family of 12 people.

7. Three men build a house for $6850, of which one furnishes $3425,

another $2055, and the third $1370. The house is sold for $5400. How much should each receive?

8. The ditch of a fortress can be filled by one sluice alone in 12 hours and by another in 15 hours; in what time will it be filled by both open together?

9. Find the square root of 60.487129 to the third decimal place.

10. Express $\frac{3\frac{2}{5}}{2\frac{1}{8} - \frac{4}{3\frac{1}{4}}}$ cwt. as the decimal of a ton.

11. What is the greatest common measure of 204, 1190, and 2096?

12. What is each man's part if $972 be divided equally among 108 men?

BRITISH AND CANADIAN HISTORY.

FRIDAY, 3RD JUNE:—AFTERNOON, 2 TO 5.

Examiners,..... { J. CLARK MURRAY, LL.D.
REV. PROF. SCARTH, M.A.
CHARLES E. MOYSE, B.A.

1. Name one celebrated Saxon, and one celebrated Danish, king of England, giving the century in which each reigned.

2. (*a*) What was the date of the battle of Hastings? (*b*) Who were the combatants? (*c*) What was the result?

3. In what reigns, and in what years, were Ireland and Wales respectively conquered and annexed to England?

4. Tell the origin and the end of Wat Tyler's rebellion.

5. (*a*) What king of England was nicknamed *Crookback?* (*b*) In what battle was he killed? (*c*) What line of kings closed, what line began, with his death?

6. What great religious event took place in the reign of Henry VIII.?

7. (*a*) Name in order the monarchs of the Stuart line? (*b*) Which of them was executed? (*c*) What government existed between his execution and the restoration of his son?

8. In whose reign, and in what year, did the American colonies declare their independence of Great Britain?

9. (*a*) What was the date of the battle of Waterloo? (*b*) Who were the combatants? (*c*) What was the result?

10. (*a*) Who was the immediate predecessor of Queen Victoria? (*b*) What was the object of the Reform Bill passed in his reign?

11. (*a*) By whom, and in what year, was the St. Lawrence discovered? (*b*) Why was it called by this name?

12. What were the date and aim of the "Quebec Act"?

13. (*a*) What was the cause of the war of 1812? (*b*) Mention any battle fought in Canada during that war.

14. In what year was the Dominion of Canada formed?

OPTIONAL SUBJECTS.

LATIN.

MONDAY, JUNE 6TH:—MORNING, 9 TO 12.

Examiners,..... { REV. GEORGE CORNISH, LL.D.
REV. CANON NORMAN, D.C.L.

1. Translate, Cicero, in Catilinam IV.—

Mihi vero importunus, ac ferreus, qui non dolore et cruciatu nocentis suum dolorem cruciatumque lenierit. Sic nos in his hominibus, qui nos, qui coniuges, qui liberos nostros trucidare voluerunt, qui singulas unius cuiusque nostrum domos et hoc universum rei publicae domicilium delere conati sunt, qui id egerunt, ut gentem Allobrogum in vestigiis huius urbis atque in cinere deflagrati imperii collocarent, si vehementissimi fuerimus, misericordes habebimur: sin remissiores esse voluerimus, sumae nobis crudelitatis in patriae civiumque pernicie fama subeunda est. Nisi vero cuipiam L. Caesar, vir fortissimus et amantissimus rei publicae, crudelior nudius tertius visus est, quum sororis suae, feminae lectissimae, virum praesentem et audientem vita privandum esse dixit, quum avum suum iussu consulis interfectum filiumque eius impuberem, legatum a patre missum, in carcere necatum esse dixit. Quorum quod simile factum? quod initum delendae rei publicae consilium? Largitionis voluntas tum in re publica versata est et partium quaedam contentio.

2. Translate and explain the following expressions:—legum æra, ingenui, tabernæ, tribuni ærarii, nudius tertius, virginum absolutionem, consilium publicum, exterminari, tumultus,—its derivation and special signification.

3. Express in the *oratio obliqua*:—"Quis sim scies ex eo quem ad te misi. Cura ut vir sis et cogita quem in locum sis progessus, vide et quid tibi jam sit necesse, et cura ut omniumt ibi auxilia adjungas etiam infimorum."

4. (*a*) Translate the following detached sentences :—(1) Nescio an amplius mihi negotii contrahatur. (2) Frequentes ad me mane convenerant. (3) Sollicitantur Allobroges; Servitia excitantur. (4) Ex fatis Sibyllinis haruspicumque responsis. (*b*) When is ut followed by a Subjunctive, and when by an Indicative mood? (*c*) Give a brief sketch of the treatment of slaves as illustrated in these orations.

5. Translate, Ovid, Fasti I :—

Disce, *metu posito*, vates operose *dierum*,
Quod petis, et voces percipe *mente* meas.
Me Chaos antiqui, nam sum res prisca, vocabant.
Aspice, quam longi temporis acta canam.
Lucidus hic aër et quae tria corpora restant,
Ignis, aquae, tellus, unus acervus erant.
Ut semel haec rerum secessit lite suarum,
Inque novas ablit massa soluta domos,
Altum flamma petit; propior locus aëra cepit;
Sederunt medio terra fretumque solo.
Tunc ego, qui fueram globus et sine imagine moles,
In faciem redii digna que membra *deo*.
Nunc quoque, confusae qnondam nota parva figurae,
Ante quod est in me postque videtur idem.
Accipe quaesitae quae causa *sit* altera formae,
Hanc simul ut *noris* officiumque meum.
Quicquid ubique vides, caelum, mare, nubila, terras,
Omnia sunt nostra clausa patenque manu.
Me penes est *unum* vasti custodia mundi,
Et jus *vertendi cardinis* omne meum est.

6. (*a*) Explain carefully the construction of the words in Italics in the above extract. (*b*) Derive Chaos, operose, lucidus, aër, massa, flamma, fretum, imagine. (*c*) Name the metre and scan the first two verses.

7. Translate, Virgil, Æneid I :—

Interea magno misceri murmure pontum,
Emissamque hiemem sensit Neptunus et imis
Stagna refusa vadis, graviter commotus : et alto
Prospiciens, summa placidum caput extulit unda.
Disiectam Aeneae toto videt aequore classem,
Fluctibus oppressos Troas caelique ruina,
Nec latuere doli fratrem Iunonis et irae.
Eurum ad se Zephyrumque vocat, dehinc talia fatur:
Tantane vos generis tenuit fiducia vestri?
Iam caelum terramque meo sine numine, Venti,
Miscere, et tantas audetis tollere moles?
Quos ego—! Sed motos praestat conponere fluctus.

Post mihi non simil poena commissa luetis.
Maturate fugam, regique haec dicite vestro :
Non illi imperium pelagi saevumque tridentem,
Sed mihi sorte datum. Tenet ille inmania saxa,
Vestras, Eure, domos ; illa se iactet in aula
Aeolus, et clauso ventorum carcere regnet.

8. Parse the following verbs, and write down the pincipal parts of each :—nocentis, lenierit, egerunt, subeunda, posito, percipe, soluta, confusae, noris, extulit.

9. (*a*) Decline in the Singular only :—Judex, dies, mare, celer, unus; and in the Plural only :—os (both), deus, bos, ordo. (*b*) Express in the Comparative and Superlative degrees :—multae arbores, malum opus, benevola mater, nigrum caelum. (*c*) Define *cardinal*, *ordinal*, and *distributive* numerals, and give the Latin for 10, 10th, 10 each, 10 times.

10. (*a*) Into what classes are Pronouns divided ? Give one instance of each from the Latin with its equivalent meaning in English. (*b*) Distinguish between *hic*, *ille*, *iste*, and *is*.

10. (*a*) Write down (Sing. and Plu.) :—(1) the Imperf. Subj. of *volo*. (2) the Plup. Subj. Act. of *ago*. (3) the Fut. Perf. Act. of *audio*. (4) the Participles of *loquor*. (*b*) Explain the forms *didici*, *dixi* and *natus*. (*c*) What case or cases do the following take after them, severally,— *doceo consulo*, *noceo*, *sub*, *coram*, *in* ?

12. Turn into Latin :—1. The master praised the boys' diligence. 2. The general sent two messengers to the city of Athens. 3. He gave his soldiers ten denarii apiece. 4. Wisdom is better than great riches. 5. The father and mother went to Rome to see their son.

GREEK.

FRIDAY, JUNE 10TH :—MORNING, 9 TO 12.

Examiners, ... { REV. GEORGE CORNISH, LL.D. / REV. CANON NORMAN, D.C.L.

1. Translate Homer, Iliad, Book IV. :—

(*a*) ἵππους μὲν γὰρ ἔασε καὶ ἅρματα ποικίλα χαλκῷ·
καὶ τοὺς μὲν θεράπων ἀπάνευθ' ἔχε φυσιόωντας
Εὐρυμέδων, υἱὸς Πτολεμαίου Πειραΐδαο·
τῷ μάλα πόλλ' ἐπέτελλε παρισχέμεν, ὁππότε κέν μιν
γυία λάβῃ κάματος, πολέας διὰ κοιρανέοντα·
αὐτὰρ ὁ πεζὸς ἐὼν ἐπεπωλεῖτο στίχας ἀνδρῶν·

καί ῥ' οὓς μὲν σπεύδοντας ἴδοι Δαναῶν ταχυπώλων,
τοὺς μάλα θαρσύνεσκε παριστάμενος ἐπέεσσιν
„'Αργεῖοι, μήπω τι μεθίετε θούριδος ἀλκῆς,
οὐ γὰρ ἐπὶ ψευδέσσι πατὴρ Ζεὺς ἔσσετ' ἀρωγὸς,
ἀλλ' οἵπερ πρότεροι ὑπὲρ ὅρκια δηλήσαντο,
τῶν ἦτοι αὐτῶν τέρενα χρόα γῦπες ἔδονται
ἡμεῖς αὖτ' ἀλόχους τε φίλας καὶ νήπια τέκνα
ἄξομεν ἐν νήεσσιν, ἐπὴν πτολίεθρον ἕλωμεν."

(*b*) ἀμφοτέρω δὲ τένοντε καὶ ὀστέα λᾶας ἀναιδὴς
ἄχρις ἀπηλοίησεν· ὁ δ' ὕπτιος ἐν κονίῃσιν
κάππεσεν, ἄμφω χεῖρε φίλοις ἑτάροισι πετάσσας,
θυμὸν ἀποπνείων. ὁ δ' ἐπέδραμεν ὅς ῥ' ἔβαλέν περ,
Πείροος· οὗτα δὲ δουρὶ παρ' ὀμφαλόν· ἐκ δ' ἄρα πᾶσαι
χύντο χαμαὶ χολάδες, τὸν δὲ σκότος ὄσσε κάλυψεν.
Τὸν δὲ Θόας Αἰτωλὸς ἐπεσσύμενον βάλε δουρὶ
στέρνον ὑπὲρ μαζοῖο, πάγη δ' ἐν πνεύμονι χαλκός.
ἀγχίμολον δέ οἱ ἦλθε Θόας, ἐκ δ' ὄβριμον ἔγχος
ἐσπάσατο στέρνοιο, ἐρύσσατο δὲ ξίφος ὀξὺ,
τῷ ὄγε γαστέρα τύψε μέσην, ἐκ δ' εἶντο θυμόν.

2. In passage (*a*) explain the force of the opt. *ἰδοι* in l. 7, and parse *ἔδονται* and *ἕλωμεν*. To what class of words does Πειρίδαο belong?

3. Give the Attic equivalents of *ὄσσε*, *κάππεσεν*, *στέρνοιο*, *εἰο*, *γνῶ*, *κοῦρος*, *ἔα*.

4. Parse the following verbs:—*ὄρσευ*, *ἆλτο*, *ἔπλεθ'*, *ἦεν*, *κατέκταν*, *πεφρικυῖαι*, *τεθηπότες*, *ἐρέει*.

5. Mention the principal characteristics of the Homeric forms.

6. Translate, Xenophon, Anabasis, Book V.:—

(*c*) Ἐπὶ τούτοις πιστὰ δόντες καὶ λαβόντες ᾤχοντο. καὶ ἧκον τῇ ὑστεραίᾳ ἄγοντες τριακόσια πλοῖα μονόξυλα καὶ ἐν ἑκάστῳ τρεῖς ἄνδρας, ὧν οἱ μὲν δύο ἐκβάντες εἰς τάξιν ἔθεντο τὰ ὅπλα, ὁ δὲ εἷς ἔμενε. Καὶ οἱ μέν, λαβόντες τὰ πλοῖα, ἀπέπλευσαν, οἱ δὲ μένοντες ἐξετάξαντο ὧδε. ἐστησαν ἀνὰ ἑκατὸν μάλιστα οἷον χοροί, ἀντιστοιχοῦντες ἀλλήλοις, ἔχοντες γέρρα πάντες λευκῶν βοῶν δασέα, εἰκασμένα κιττοῦ πετάλῳ, ἐν δὲ τῇ δεξιᾷ παλτὸν ὡς ἐξάπηχυ, ἔμπροσθεν μὲν λόγχην ἔχον, ὄπισθεν δὲ αὐτοῦ τοῦ ξύλου σφαιροειδές. Χιτωνίσκους δὲ ἐνεδεδύκεσαν ὑπὲρ γονάτων, πάχος ὡς λινοῦ στρωματοδέσμου, ἐπὶ τῇ κεφαλῇ δὲ κράνη σκύτινα οἷαπερ τὰ Παφλαγονικά, κρώβυλον ἔχοντα κατὰ ἔσον, ἐγγύτατα τιαροειδῆ· εἶχον δὲ καὶ σαγάρεις σιδηρᾶς.

(*d*) Καὶ τούτους τί δοκεῖτε; ἠδίκουν μὲν οὐδέν, ἔδεισαν δὲ μὴ λύττα τις ὥςπερ κυσὶν ἡμῖν ἐμπεπτώκοι. εἰ οὖν ταῦτα τοιαῦτα ἔσται, θεάσασθε οἷα ἡ

κατάστασις ἡμῖν ἔσται τῆς στρατιᾶς. Ὑμεῖς μὲν οἱ πάντες οὐκ ἔσεσθε κύριοι οὔτε ἀνελέσθαι πόλεμον ᾧ ἂν βούλησθε οὔτε καταλῦσαι, ἰδίᾳ δὲ ὁ βουλόμενος ἄξει στράτευμα ἐφ' ὅ,τι ἂν θέλῃ. κἂν τινες πρὸς ὑμᾶς ἴωσι πρέσβεις ἢ εἰρήνης δεόμενοι ἢ ἄλλων τινός, κατακανόντες τούτους οἱ βουλόμενοι ποιήσουσιν ὑμᾶς τῶν λόγων μὴ ἀκοῦσαι τῶν πρὸς ὑμᾶς ἰόντων. Ἔπειτα δὲ οὓς μὲν ἂν ὑμεῖς ἅπαντες ἕλησθε ἀρχοντας, ἐν οὐδεμιᾷ χώρᾳ ἔσονται, ὅστις δ' ἂν ἑαυτὸν ἕληται στρατηγὸν καὶ ἐθέλῃ λέγειν, Βάλλε, βάλλε, οὗτος ἔσται ἱκανὸς καὶ ἄρχοντα κατακανεῖν καὶ ἰδιώτην ὃν ἂν ὑμῶν ἐθέλῃ ἄκριτον, ἣν ὦσιν οἱ πεισόμενοι αὐτῷ, ὥςπερ καὶ νῦν ἐγένετο.

7. Translate the following single passages:—(1) Τὸ *κινεῖσθαι καὶ ἀνδίζεσθαι παρεῖχε θερμασίαν τινὰ καὶ ὑγρότητα.* Explain the force of the two infinitives. (2) Μὰ *Διὰ οὔτε τούτοις ἐπικουρεῖτε, οὔτε σὺν ἐμοὶ τὸν ἀτακτοῦντα ἐπαίετε.* (3) *Ἐν ἀνδραπόδων χώρᾳ ἐσόμεθα.* (4) *Ἀλλὰ γάρ, ὁπόταν γαλήνη ᾖ, ἐμβιβῶ.*

8. (*a*) Parse *πλευσούμεθα, καθίστασαν, ἀνέκραγον, προδραμόντες, ἀπαγαγεῖν, τετρωμένος.* (*b*) Derive *αἰχμαλώτων, νεωκόρῳ, ἐπέψηφισε, καταγοητευθέντας, σωφρονῆτε.*

9. (*a*) Decline throughout *σὺ* and *οὗτος*. (*b*) Give the gen, and dat. sing. and accus. and dat. plural, where in use, of *κέρας, αἰδώς, ἐλπίς, κίων, ὀδούς, ὄρνις, Σαλαμίς.* (*c*) Compare, giving masculine nom. singular of each, *ταχύς, ἀσφαλής, καλός, φρόνιμος, εὐρύς, μέλας.* (*d*) Give the 1st per. sing. of the principal tenses indic. mood of *ἔχω, θνήσκω, τίθημι, φημὶ, λαμβάνω, ἀφικνέομαι.* (*e*) Distinguish *ποῦ, ποῖ, πῶς, πότε* and *πόθεν.*

10. Put into Greek:—(1) as quickly as possible; (2) a slinger; (3) he happened to be general; (4) to inflict punishment; (5) to suffer punishment.

11. What cases follow *διά, ἐπί, σὺν* and *εἰς*?

ENGLISH LANGUAGE.

(Peile, *Primer of Philology*; Trench, *Study of Words*; Smith, *English Grammar.*)

WEDNESDAY, JUNE 8TH:—MORNING, 9 TO 12.

Examiners, { REV. J. CLARK MURRAY, LL.D. / REV. PROF. SCARTH, M.A. / CHAS. E. MOYSE, B.A.

1. What does Peile say about *chamberlain, adder, hernshaw*, the suffixes *tar* and *ster*?

2. Apply Grimm's Law to *goose*, *deer*, *kin*, *heart*, *three*, and explain the results.

3. "That the second great group of amalgamating languages is called Indo-European." Name the chief languages (living and dead) of this group.

(*b*) What is meant by the term Turanian as applied to languages?

4. "Light can be thrown on the history of this country (*England*) by the names of places." Prove the statement.

5. "A mass of conjunctions are obviously cases, generally of Pronouns." Give one example from English, one from Latin, one from Greek. (*b*) Why is the Pronoun, as generally understood, inaccurate?

6. The Second Lecture in Trench deals with the Poetry in words. Give six of his examples, and explain them.

7. "What a record of inventions, how much of the history of commerce is preserved in names!" Derive ten of these.

8. What is the difference between *contrary* and *opposite*; *education* and *instruction*; *abdication* and *desertion*?

9. What does Trench say about *apis*, *crypt*, *post*, *stock*?

10. Name the Relative Pronouns, and point out their uses. Tell what you know concerning their history.

11. What do you know concerning the history and use of the Infinitive mood, the Gerund or Verbal Noun, the Present Participle?

12. Compare three Adverbs in the regular mode, five "irregularly," and name two which shew defective comparison.

13. Derive two Adjectives from Nouns; two Nouns from Adjectives; two Verbs from Adjectives; two Verbs from Nouns.

14. Analyse grammatically:—

Life, like a dome of many-coloured glass,
Stains the white radiance of Eternity,
Until Death tramples it to fragments.—Die,
If thou wouldst be with that which thou dost seek!

GEOGRAPHY.

WEDNESDAY, 8TH JUNE :—AFTERNOON, 2 TO 4.

Examiners,..... { J. CLARK MURRAY, LL.D. / REV. PROF. SCARTH, M.A. / CHARLES E. MOYSE, B.A.

1. What do you mean by Physical Geography ?

2. Describe the origin of rivers. Define Watershed, Fork, Basin.

3. How are Bars and Deltas formed ? Name the most important deltas of each continent.

4. What are the three main causes of variations in temperature ? Give illustrations.

5. State what active volcanoes exist in Europe. What proofs can you give of the presence of volcanic agency in Europe in the earlier stages of the earth's history ?

6. Name the principal manufactures of England. State in what parts of the kingdom these are chiefly carried on.

7. Give the position, boundaries and political divisions of Asia.

8. What are the general characteristics of Africa ? Name the large lakes of Africa, and the rivers which drain them.

9. Name the rivers of North America, classing them according to the gulfs and oceans into which they flow.

10. Name the provinces of Canada, with capitals. Give the date of confederation. Name the chief industries, and the principal lines of railway.

ENGLISH LITERATURE.

Brooke, *Primer ;* Scott, *Lady of the Lake ;* Milton, *Paradise Lost*, Bks. I. and II.

THURSDAY, JUNE 9TH :—MORNING, 9 TO 12.

Examiners,..... { REV. J. CLARK MURRAY, LL.D. / REV. PROF. SCARTH, M.A. / CHAS. E. MOYSE, B.A.

1. State what you know concerning Chaucer's life and works.

2. Notice the chief features of English Literature during the First Elizabethan Period, 1559-1579.

3. Name the authors of the following:—*Art of Poesie, Polyolbion, Lycidas, Principia, Dunciad, Religio Medici, Ralph Roister Doister, As You Like It.* In what centuries were they written? Add a note as to the character of each work.

4. Name eight great poets of the present century, and one poem of each.

5. What was the nature of the conversation between Ellen and the stranger at their first meeting?

(*b*) Describe the procession of Sir Roderick's barges.

(*c*) Narrate Brian the Hermit's acts, and the substance of his words in Canto III (The gathering).

(*d*) Who shot Blanche of Devan? What was her dying request.

(*e*) What part does Ellen play in Stirling Castle?

6. Explain the meaning of:—the tower on Shinar's Plain, I dæan vine God wot, Hotspur's bows, bosky thickets, for battle boune, kern, a stag of ten, jennet, Tinchel.

7. Give a brief outline of the First Book of Paradise Lost.

8. To what ancient hosts does Milton compare the array of fallen angels? How does he describe Satan's shield and spear?

9. Who pleaded for open war? his chief arguments? who used "words clothed in reason's garb?" the chief points in his speech?

10. In what ways does Milton make the fallen angels spend their leisure? Mention the four Rivers of Hell, and state the meaning of each name.

11. Who kept the key of Hell-gate? What lay directly outside Hell? To whom did Satan speak just after leaving Hell? Why? What answer did he receive?

GENERAL HISTORY.

(Peile's Primers and Collier's Great Events.)

THURSDAY, JUNE 9:—AFTERNOON, 2 TO 5.

Examiners, { REV. J. CLARK MURRAY, LL.D. / REV. PROF. SCARTH, M.A. / CHAS. E. MOYSE, B.A.

1. Who was the great Spartan law-giver? What regulations did he make concerning the use of money? What was the nature of Spartan life and education, and what its aim?

2. In the Persian invasion of Greece, state in what great battles the invaders were defeated, and give dates.

3. Who was Epaminondas? What were the results of the battles of Leuktra and Mantinea?

4. What story do the Romans tell about the founding of Rome? How long was she governed by kings? Who was the last king?

5. What great wars had Rome to wage before she became mistress of Italy? What were the two ways by which she kept Italy under her power?

6. Mention some of the changes made by Diocletian in the plan of the Roman government.

7. When and between whom was the battle of Chalons fought? Who was the last Emperor of Rome? Give the date. State who was proclaimed king of Italy in his stead.

8. Give an account of the origin of the Crusades. The date and history of the first? How many Crusades were there?

9. Give an account of the rise of the Dutch Republic.

10. Give an account of the Russian compaign of 1812.

FRENCH.

THURSDAY, JUNE 9TH:—MORNING, 9 TO 12.

Examiner, ... P. J. DAREY, M.A, B.C.L.

1. Translate into English:—

Chrysale. Je vous le dis ma sœur, tout ce train-là me blesse,
Car c'est comme j'ai dit, à vous que je m'adresse.
Je n'aime point céans tous vos gens à latin;
Et principalement ce monsieur Trissotin.
C'est lui qui, dans des vers, vous a tympanisées:
Tous les propos qu'il tient sont des billevesées;
On cherche ce qu'il dit après qu'il a parlé;
Et je lui crois pour moi le timbre un peu fêlé.
Philaminte. Quelle bassesse, ô ciel, et d'âme et de langage
Bélise. Est-il de petits corps un plus lourd assemblage
Un esprit composé d'atômes plus bourgeois?
Et de ce même sang se peut-il que je sois?
Je me veux mal de mort d'être de votre race;
Et de confusion, j'abandonne la place.

Les Femmes savantes, A. II S. VIII.

2. Le brouillard s'était insensiblement tansrformé en une brume qui commençait à transpercer le jeune clerc; il parut s'effrayer de la distance qui lui restait à parcourir, et le cavalier qui vit son hésitation lui proposa d'entrer à la ferme. Celle-ci avait un faux air de forteresse. Enveloppée d'un mur de clôture assez élevé, elle ne laissait apercevoir qu'à travers les barreaux d'une porte à claire-voie soigneusement fermée.

Le Philosophe sous les toîts.

3. Explain why *commençait* and *parut*, in the above extract, are in different tenses.

4. Translate into English :—

On avait beau heurter et m'ôter son chapeau,
On n'entrait point chez nous sans graisser le marteau.
. . . . . .
Crois-tu qu'un juge n'ait (*a*) qu'à faire bonne chère,
Qu'à battre le pavé comme un tas de galans
Courir le bal la nuit, et le jour les brelans.

Racine, Les Plaideurs.

5. (*a*) Explain fully why *ait* is in this mood and tense.

6. State two cases when you would use the Imperfect of the Subjunctive. Give examples.

7. Write correctly the Past Participles in the following sentences, and explain why they should be written so :—

La pluie a *surpris* deux jeunes demoiselles qui se sont *enroué;* nous nous sommes *empressé* de leur donner des soins. Ces demoiselles ont *voulu* aller aux champs, je les ai *vu* passer de ma fenêtre, elles couraient comme je ne les ai jamais *vu* courir.

8. Name the six greatest prose writers of the XVIIth century; and tell what were their principal works.

9. Who are the authors who have written the *Lettres persanes*, *Emile*, *Zaire*, le *Discours sur la Méthode*, *Mariage de Figaro*. When did they live? Mention some other works those authors have written.

10. Translate in French :—

The misfortune of Addison's character is this: He is known only to most readers, at least to most scholars, as a man of the gentlest manners, and as a polite writer. Under the last idea, we admire the elegance of his mind, the softness of his ridicule, the beauty of his moral sentiments, and the graces of his imagination. But he had another and very different character. He was a keen party man, and when heated in political controversy he could be as *declamatory* and more *vehement* than I have thought fit to represent him. In proof of this I refer you to his political writings, but more especially to his *Whig*-examiner, written with a poignancy and severity which could hardly have been expected from Addison. This was his *political* character.

Bishop Hurd.

GERMAN.

FRIDAY, JUNE 10TH :—AFTERNOON, 2 TO 5.

Examiner,.....C. F. A. MARKGRAF, M.A.

1. Translate into English :—

(A) Sagt mir, ihr holden Töchter der rauhen, schwarzen Erde, wer gab euch eure schöne Gestalt? Denn wahrlich von niedlichen Fingern seid ihr gebildet. Welche kleinen Geister stiegen aus euren Kelchen empor? Und welch Vergnügen fühltet ihr, da sich Göttinnen auf euren Blättern wiegten? Sagt mir, friedliche Blumen, wie theilten sie sich in ihr erfreuend Geschäft, und winkten einander zu, wenn sie ihr feines Gewebe so vielfach spannen, so vielfach zierten und stickten?

Aber ihr schweigt, holdselige Kinder, und genießet eures Daseins. Wohlan! mir soll die lehrende Fabel erzählen, was euer Mund mir verschweiget.

Als einst, ein nackter Fels, die Erde dastand, siehe, da trug eine freundliche Schaar von Nymphen den jungfräulichen Boden hinan, und gefällige Genien waren bereit, den nackten Fels zu beblümen. Vielfach theilten sie sich in ihr Geschäft.

Herder, „Die Lilie und die Rose."

(B) Die Muttersprache.

Muttersprache, Mutterlaut,
Wie so wonnesam, so traut!
Erstes Wort, das mir erschallet,
Süßes, erstes Liebeswort;
Erster Ton, den ich gelallet,
Klingest ewig in mir fort!

Ach, wie trüb' ist meinem Sinn,
Wann ich in der Fremde bin;
Wann ich fremde Zungen üben,
Fremde Worte brauchen muß,
Die ich nimmermehr kann lieben,
Die nicht klingen, wie ein Gruß!

Sprache, schön und wunderbar,
Ach, wie klingest du so klar!
Will noch tiefer mich vertiefen
In den Reichthum, in die Pracht;
Ist mir's doch, als ob mich riefen
Väter aus des Grabes Nacht.

Klinge, klinge fort und fort,
Heldensprache, Liebeswort!
Steig' empor aus tiefen Grüften,
Längst verscholl'nes, altes Lied!
Leb' aufs Neu in heil'gen Schriften,
Daß dir jedes Herz erglüht!

Max von Schenkendorf.

2. (See Ext. A and B.) (*a*) Give the four cases Singular of:—der rauhen, ſchwarzen Erde; eure ſchöne Geſtalt; verſchollenes, altes Lied; euer Mund. (*b*) Decline in both numbers:—Welche kleinen Geiſter; friedliche Blumen; fremde Worte.

3. Give the gender and Nominative Singular of:—Töchter, Bänke, Göttinnen, Blätter, Eiſenbahnen, Väter, Thüren, Mädchen, Völker, Bücherſchränke, Bilderbücher, Augen, Knaben, Kaufleute, Söhne, Nachbarn.

4. (See Ext. A and B.) Parse the following verbs, and give the Present Infinitive of each:—ſagt, gab, ſeid, ſtiegen, fühltet, ſpannen, zierten, genießet, ſoll, daſtand, trug, waren, klingeſt, bin, muß, kann, will, leb'.

5. (*a*) Give the degrees of comparison in German of the following adjectives:—strong, hard, black, old, near, great, long, short. (*b*) Form adjectives from Blech, Stoff, Holz, Eiſen, Kryſtall, Blei, Glas, Knochen, Tuch.

6. (*a*) Write in full letters 16, 37, 401, 2080, 21,599. (*b*) When is *Time* expressed by Zeit; when by mal and Mal? (*c*) Which numerals are declined like adjectives? Give examples for *b* and *c*.

7. When are *this* and *that* expressed by dieſer, dieſe, dieſes, and jener, jene, jenes? and when by dies and das? Give short examples.

8. (See Ext. A and B.) Verſchweiget, beblümen, erglüht.—What kind of verbs? How are such verbs formed? How many kinds of verbs are there in German with regard to their formation?

9. Write out the Present and Imperfect (*all* persons) and the 3rd Sing. and 1st Plural of the Perfect, Pluperfect, First and Second Future tenses of the Indicative active of ausſuchen and bringen.

10. What prepositions govern the Dative and Accusative; and when do they govern the former, and when the latter?

11. Translate into English:—

Die Kindheit iſt der Frühling und das Alter der Winter des Lebens. Die Quelle unſeres Fluſſes iſt auf einem hohen Berge. Das Obſt, welches Sie da ehen iſt noch nicht reif. Die Erzählungen alter Leute ſind oft ſehr unterhaltend. Wie viel Uhr iſt es? Es iſt ein Viertel nach elf; es iſt halb zwei. Habt Ihr ſchon lange auf uns gewartet? Wollen Sie heute Nachmittag irgendwohin gehen? Nein, ich bleibe zu Hauſe; denn mehrere Freundinnen haben verſprochen, mich zu beſuchen. Du haſt Recht, und er hat Unrecht. Die jungen Leute waren in den Wald geritten. Seit wann wohnen Sie in der Stadt bei Ihrer Tante? Der Lehrer wird die fleißigen Schüler loben. Meine Vettern ſind vor einigen Tagen abgereiſ't; aber wir hoffen, ſie vor dem nächſten Herbſt wiederzuſehen.

GEOMETRY.

TUESDAY, JUNE 7TH :—MORNING, 9 TO 12.

Examiners, ... { REV. PRINCIPAL LOBLEY, D.C.L. / GEORGE H. CHANDLER, M.A.

1. Draw a straight line at right angles to a given straight line from a given point in the same.

2. The greater side of every triangle has the greater angle opposite to it.

3. If a straight line falling on two other straight lines make the alternate angles equal to one another, the two straight lines shall be parallel to one another.

4. Equal triangles on equal bases in the same straight line, and on the same side of it, are between the same parallels.

5. Describe a parallelogram equal to a given rectilineal figure, and having an angle equal to a given rectilineal angle.

6. If a straight line be divided into any two parts, the square on the whole line is equal to the squares on the two parts, together with twice the rectangle contained by the two parts.

(*a*) The square on any line is equal to four times the square on half the line.

7. Divide a given straight line into two parts, so that the rectangle contained by the whole and one of the parts may be equal to the square on the other part.

8. One circumference of a circle cannot cut another at more than two points.

9. If a straight line touch a circle, the straight line drawn from the centre to the point of contact shall be perpendicular to the line touching the circle.

10. If two straight lines cut one another within a circle, the rectangle contained by the segments of one of them shall be equal to the rectangle contained by the segment of the other.

ALGEBRA.

SATURDAY, JUNE 11TH :—MORNING, 9 TO 12.

Examiners, ... { REV. PRINCIPAL LOBLEY, D.C.L. / GEORGE H. CHANDLER, M.A.

1. Explain the meaning of the terms co-efficient, exponent, power, index. Express the following by means of algebraical symbols : twelve times the

fourth root of the sum of $3a$ and $2x$ is equal to the quotient of $2a$ divided by the square root of four times f.

2. Add together $1 - (1 - \overline{1 - x})$, $2x - (3 - 5x)$, $2 - (-4 + 5x)$, and $x(3 + x)$, and write down the square root of the result.

3. Divide $ax^3 - (a^2 + b)x^2 + b^2$ by $ax - b$.

4. Resolve the following expressions into elementary factors:

(a) $x^2 + 7x - 8$,
(b) $6x^2 + 5x - 4$,
(c) $5(x^2 - y^2) + 3(x + y)^2$,
(d) $(3x - 2)^2 - (x - 3)^2$.

5. Find the greatest common measure of $x^2 - 2x - 3$, $x^2 - 7x + 12$, and $x^2 - x - 6$.

6. Reduce the following fractions to their lowest terms:

(a) $\dfrac{ac + by + ay + bc}{af + 2bx + 2ax + bf}$,

(b) $\dfrac{ax^m - bx^{m+1}}{a^2bx - b^3x^3}$

7. Solve the following equations:

(a) $\dfrac{1}{x} + \dfrac{1}{2x} - \dfrac{1}{3x} = \dfrac{7}{3}$,

(b) $10(x + \frac{1}{2}) - 6x(\frac{4}{x} - \frac{1}{3}) = 23$,

(c) $\sqrt{x} + \sqrt{x - \sqrt{1 - x}} = 1$.

8. Find x and y from the simultaneous equations:

$$\left.\begin{aligned} &\frac{x+2}{7} + \frac{y-x}{4} = 2x - 8, \\ &\frac{2y - 3x}{3} + 2y = 3x + 4. \end{aligned}\right\}$$

9. Given two numbers such that the difference of their squares is double of their sum; show that their product will be less than the square of the greater by the double of it.

10. In a garrison of 2744 men there are two cavalry soldiers to twenty-five infantry, and half as many artillery as cavalry: find the number of each.

11. Divide the number n into two such parts that the quotient of the greater divided by the less may be q with a remainder r.

TRIGONOMETRY.

SATURDAY, JUNE 11TH:—AFTERNOON, 2 TO 5.

Examiners,..... { REV. PRINCIPAL LOBLEY, D.C.L.
GEORGE H. CHANDLER, M.A.

1. How many degrees in the angle of which the circular measure is 2.375?

If this angle were taken as the unit angle, what would be the measure of an angle of 30°?

2. Explain how the sign—(*minus*) is applied to angles and lines.

3. How would you find (geometrically) the angle of which the sine is $\frac{3}{4}$?

Find the numerical values of the cosine, secant and cotangent of this angle.

4. Prove that.

(*a*) $\sin^2 A \sec^2 = \sec^2 A - 1$

(*b*) $\tan A \cos A = \sqrt{1 - \cos^2 A}$,

(*c*) $\operatorname{cosec} A - \cot A = \sqrt{\frac{1 - \cos A}{1 + \cos A}}$

5. Determine a formula for the cosine of the sum of two angles in terms of the sines and cosines of the angles.

6. In any triangle

$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$$

7. One angle of a right-angled triangle is 30°, and the side opposite it is 20 feet; find the remaining parts of the triangle.

8. A tower on the bank of a river is 120 feet high, and the angle of elevation of the top of the tower from the opposite bank is 20°; find the river's breadth, if tan 20° = ·35.

NATURAL PHILOSOPHY.

SATURDAY, JUNE 11TH:—AFTERNOON, 2 TO 5.

Examiners,..... { REV. PRINCIPAL LOBLEY, D.C.L.
GEORGE H. CHANDLER, M.A.

1. Shew clearly how forces can be represented by straight lines.

2. Assuming the Parallelogram of Forces for *direction*, prove it for the magnitude of the resultant.

3. If the resultant of two forces acting at an angle of 60° be 15 lbs. and one of them be 10 lbs; find the other.

4. If two forces P and Q act upon a body in parallel lines but in opposite directions, describe the effect which will be produced upon the body.

5. Define the centre of gravity of any body or system of particles.

(*a*) Find the centre of gravity of three equal heavy particles placed at the angular points of any triangle $A\ B\ C$.

6. In a balance whose arms are not equal but in the ratio of 8 : 9, find the true weight of a body which when placed in a scale at the end of the shorter arm appears to weigh 36 lbs.

7. If 8 men work at a capstan of radius 18 inches, using levers that stretch out $7\frac{1}{2}$ ft. from the centre, and each man pushes with a force of 36 lbs., find the force produced upon the rope.

8. Explain the terms Mass, Momentum, Uniform Velocity, Acceleration.

(*a*) Compare the Momenta of two bodies weighing 3 lbs. and 4 oz. respectively, when the former moves with a velocity of 165 yards per minute and the latter with a velocity of 396 ft. per second.

9. A body is dropped into a shaft 240 ft. deep. Find in what time from its leaving the top of the shaft the sound of its arrival at the bottom will be heard, if sound moves at the rate of 1120 ft. per second. (Take $g = 32.2$.)

10. A ball which falls from a height of 80 ft. strikes the ground and rebounds again and again. Find how high it will rise after the fourth rebound; the co-efficient of elasticity being $\frac{1}{2}$.

11. If a piston 16 inches in diameter be in contact with water which is subjected to a pressure of 10 lbs. on the square inch; find the weight of the piston to secure equilibrium.

12. A cube of wood measuring 6 inches each way floats in water with four of its edges horizontal and one of the diagonals of its ends vertical; find how high above the surface its uppermost edge will be, its specific gravity being ·7.

BOTANY.

MONDAY, JUNE 6TH, 1881:—2 P.M. TO 5.

1. Describe the Stamens and Pistils. State the structure and use of either.

2. Describe the structures and state the uses of the Parenchyma and Epidermis of a Leaf.

3. What structures are indicated by the terms, Root-fibre, Medullary Ray, Bast tissues, Bulb. Describe one of them.

4. Illustrate by figures the terms,—Linear, Sagittate, Ovate, Parallel-veined, Feather-veined, as applied to leaves.

5. Give examples of plants having Opposite Leaves, Endogenous Stems or Flowers in Umbels.

6. Name the Series and Classes of Plants, and give an example of each.

7. What substances present in the atmosphere afford nourishment to plants, and how?

8. What are the parts of a complete Ovule, and into what do they change in the Seed.

9. State some of the distinctive characters of any Canadian plant, and its place in the classification.

10. Describe the Flower exhibited, stating its parts and mode of inflorescence.

ELEMENTARY CHEMISTRY.

MONDAY, JUNE 6TH:—AFTERNOON, 2 TO 5.

Examiner,.....B. J. HARRINGTON, B.A., Ph. D.

1. What is Ozone? Give its properties.

2. Distinguish between the different physical states of matter.

3. Explain what is meant by the maximum density of water, and show its importance in nature.

4. Distinguish between a chemical symbol and a chemical formula. Express also by means of an equation the change which takes place when Hydrochloric Acid is poured upon marble.

5. When Oxalic Acid and Oil of Vitriol are heated together, what gases are produced? How may these gases be separated?

6. How may Ammonia be prepared? Give its formula and properties.

7. How is Phosphorus obtained from bones? Give the principal differences between crystalline and amorphous Phosphorus.

8. How is Nitric Acid prepared, and by what tests can it be distinguished from other acids?

9. Explain Dr. Clark's soap test for determining the hardness of water.

10. State the law of multiple proportion, and illustrate it by examples.

CONTENTS.

I. GENERAL ANNOUNCEMENTS.

Benefactors, Calendar, Governing Body, Officers of Instruction, General Statement ... Page 1 to 16.

II. FACULTY OF ARTS.

Admission ... 18
Apparatus (Philosophical) ... 49
Attendance ... 35
Boarding houses ... 34
Conduct ... 35
Course of Study ... 17
Degrees ... 25
Examinations ... 25
Exemptions from Fees ... 24
" in Course of Study ... 28
Exhibitions ... 20–22
Fees ... 37
Honours ... 31

LECTURES :—

" Ordinary ... 38–44
" Honour ... 45–49
Library ... 36
Matriculation ... 18
Medals ... 31
Museum ... 36–49
Prizes ... 31
Scholarships ... 20
Time Table ... 52

III. FACULTY OF APPLIED SCIENCE.

Admission ... 54
Course of Study ... 57
Courses of Lectures ... 61
Degrees ... 58
Examinations ... 58
Exhibitions and Prizes ... 55
Fees ... 60
List of Models ... 68
Text Books ... 68
Time-table ... 71

IV. FACULTY OF MEDICINE.

Admission ... 73
Courses of Lectures ... 76
Degrees ... 80
Examinations ... 82
Fees ... 84
Hospitals ... 87
Medals and Prizes ... 84
Medical Society ... 87
Museum and Library ... 86
Past Session ... 90
Qualifications for Degrees ... 80
Time-table ... 96

V. FACULTY OF LAW.

Admission ... 97
Course of Study ... 98
Degrees ... 98–103
Fees ... 102
Regulations ... 100

VI. UNIVERSITY SCHOOL EXAMINATIONS.

For Associate in Arts and Junior Certificate ... 105
Higher Examination of Women ... 109

VII. MCGILL NORMAL SCHOOL.

Admission, &c ... 113
Course of Study ... 116
Model Schools ... 121
Regulations ... 119

VIII. UNIVERSITY LISTS, &c.

Passed the University Examinations, 1880–81 ... 124
Exhibitions and Scholarships ... 127
Prizes, Honours and Standing, 1880-81 ... 128
Graduates ... 148
Students ... 164
School Certificates ... 170
Donations to Library and Museum 177

This book is defective
It has boittle pages.
The decision has
been made to put it
in box. Prcase, replace
it gently in the box

Item No. 3 100 785 287 7

Date 28.01.97

McGill University Libraries

McGill University Library
3 103 858 492 F